Data Evaluation Record on the phototransformation of saflufenacil on soil

PMRA Document Number 1547168 EPA MRID Number 47127825
PMRA Submission Number 2008-0431

Data Requirement: PMRA Data Code: 8.2.3.3.1
EPA DP Barcode: 349858
OECD Data Point: IIA 7.1.3
EPA Guideline: 835.2410

Test material:
Common name: Saflufenacil.
Chemical name:
IUPAC name: N'-{2-Chloro-4-fluoro-5-[1,2,3,6-tetrahydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)pyrimidin-1-yl]benzoyl}-N-isopropyl-N-methylsulfamide.
N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-N-methylsulfamide.
CAS name: 2-Chloro-5-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-4-fluoro-N-[[methyl(1-methylethyl)amino]sulfonyl]benzamide.
CAS No.: 372137-35-4.
Synonyms: BAS 800 H, CL No. 433379, 4054449, AC 433,379.
Smiles string: N1(C)C(C(F)(F)F)=CC(=O)N(C2=CC(C(=O)NS(=O)(=O)N(C)C(C)C)=C(Cl)C=C2F)C1=O (EPI Suite v3.12 SMILES string from ISIS .MOL).

EPA Reviewer: Greg Orrick, USEPA — **Signature:** Greg Orrick **Date:** June 8, 2009

PMRA Reviewer: Janine Glaser (1009), HC-PMRA-EAD — **Signature:** **Date: 2008 November 28**

APVMA Reviewer: Daryl Murphy, DEWHA/APVMA — **Signature:** D. Murphy **Date:**

Company Code: BAZ
Active Code: SFF
Use Site Category: 13 and 14
EPA PC Code: 118203

CITATION: Ta, C. 2007. BAS 800 H: Soil photolysis. Unpublished study performed, submitted, and sponsored by BASF Corporation, Research Triangle Park, North Carolina. BASF Doc ID: 2007/7007647. Study Protocol ID: 132653. Experiment started March 7, 2005 and completed July 27, 2007 (p. 11). Final report issued November 13, 2007.

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Primary Reviewer: Leanne Ganser
Cambridge Environmental

Signature: Leanne Ganser
Date: 5/29/08

Secondary Reviewer: Kathleen Ferguson
Cambridge Environmental

Signature: Kathleen Ferguson
Date: 5/29/08

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Final Reviewer: Greg Orrick
EPA Reviewer

Signature:
Date:

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EXECUTIVE SUMMARY

The phototransformation of [phenyl-U-^{14}C]- and [uracil-4-^{14}C]-labeled N′-{2-chloro-4-fluoro-5-[1,2,3,6-tetrahydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)pyrimidin-1-yl]benzoyl}-N-isopropyl-N-methylsulfamide (saflufenacil; radiochemical purities ≥98.99), at 0.26 mg a.i./kg soil, was studied on moist loamy sand soil (pH 5.9, organic carbon 0.8%) from Wisconsin that was irradiated on a 12-hour light/12-hour dark cycle (phenyl label only) for 30 days or continuously (both labels) for 15 days using a filtered xenon arc lamp at 22 ± 1°C. The light intensity of the xenon arc lamp over the wavelength range 300-800 nm was 588-605 W/m^2, compared to 584 W/m^2 for natural spring sunlight at 40°N latitude. The experiments were conducted in accordance with USEPA Pesticide Assessment Guidelines, Subdivision N §161-3 and in compliance with USEPA FIFRA GLP standards (40 CFR Pt. 160). For the irradiated soils, the test system consisted of stainless steel dishes (8.5 cm x 4 cm x 1.1 cm) containing *ca.* 20 g (dry wt.) of moist treated soil. Samples were set within the irradiation apparatus in a jacketed stainless steel tray (27 cm x 19 cm x 3.5 cm) covered with a quartz glass plate and attached to a volatile trapping system. For the dark controls, the test system consisted of wide-mouth polypropylene centrifuge bottles (250 mL) containing *ca.* 20 g (dry wt.) of moist treated soil that were attached with replicates connected in series to a volatile trapping system. CO_2-free air was pulled (flow rate not reported) through the cooling tray or centrifuge bottles and then through ethylene glycol, 0.1N H_2SO_4, and NaOH trapping solutions. Duplicate irradiated samples and dark controls were collected after 0, 6, 14, 22 and 30 days for the 12-hour light/12-hour dark cycle experiment and after 0, 1, 3, 7, 11 and 15 days for the continuous irradiation experiment. Soil samples were sequentially extracted once with acetonitrile and twice with acetonitrile:water (7:3, v:v) by shaking. The extracts were combined, concentrated to dryness and reconstituted in acetonitrile:water (1:1, v:v). The soil extracts, volatile trapping solutions, and extracted soils were analyzed for total radioactivity using LSC and LSC following combustion. Aliquots of the combined soil extracts were analyzed for individual compounds using HPLC. Samples were cochromatographed with unlabeled reference standards of saflufenacil (purity 99.9%) and six of its probable transformation products. Identifications were confirmed using LC/MS/MS and proton NMR characterization. High dose samples treated at 10x the application rate were used to aid in identification of transformation products.

Experimental conditions were reported to be maintained throughout the experiments; supporting data were not provided. The soil viability was not reported.

12 hour light/12 hour dark cycle (phenyl label only). Overall [^{14}C]residue recoveries averaged 95.9 ± 2.2% (92.0-100.0%) of the applied in irradiated samples and 96.8 ± 1.8% (94.3-100.0%) in the dark controls. In the irradiated samples, there was a slight decline (*ca.* 6%) in recovery over time. There was no loss of material over time from the dark controls.

For the irradiated samples, [^{14}C]saflufenacil decreased from an average 97.8% of the applied at time 0 to 58.0% at 22 days posttreatment and 43.1% at 30 days (study termination). The only major transformation product isolated and identified was

- N-{4-chloro-2-fluoro-5-[({[isopropyl(methyl)amino]-sulfonyl}amino)carbonyl]phenyl}-4-4-4-trifluoro-3,3-dihydroxybutanamide (M800H15).

The study author did not consider M800H15 a major degradate because it did not exceed 10% of the applied radioactivity during the experimental period.

Three minor transformation products were identified:

- N-[2-chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N'-isopropylsulfamide (M800H01);
- N-{4-chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino) carbonyl]phenyl}-N'-methylurea (M800H07); and
- N'-[2-chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)tetrahydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-n-methylsulfamide (M800H08).

M800H15 averaged a maximum of 8.0% (6.4% and 9.6% in replicates) of the applied at 30 days posttreatment. Minor compounds M800H01, M800H07, M800H08 each averaged ≤3.0% of the applied at all sampling intervals. Six HPLC peaks (products) were isolated and quantified but not identified. Six other minor transformation products isolated but not identified. Products with a Rt of 13.4 minutes (no # id) and 17.4 minutes (Product 8) averaged maximums of 8.0% (6.7% and 9.2% in replicates) and 6.2% of the applied, respectively. Four other unidentified peaks were each ≤2.4% of the applied, and "other unknowns" totaled an average maximum of 6.6%. Extractable [^{14}C]residues decreased from 97.8% of the applied at time 0 to 75.3% at 30 days, while nonextractable [^{14}C]residues increased from 1.5% of the applied to 17.1%. Nonextractable residues were further characterized as 9.8-10.1% fulvic acids, 1.4-1.5% humic acids, and 5.4-5.9% humin. At 30 days posttreatment, $^{14}CO_2$ (NaOH solution, not confirmed) accounted for 0.8% of the applied and volatile organics were not reported.

In the corresponding dark controls, [^{14}C]saflufenacil decreased from an average of 97.8% of the applied at time 0 to 51.7% at 14 days posttreatment, and was 65.2% at 30 days. Two major transformation products, M800H07 and M800H08, were isolated (the study author only reported one major transformation product: M800H08). M800H07 averaged a maximum of 17.3% of the applied at 14 days posttreatment and decreased to 2.1% at 30 days. M800H08 averaged a maximum of 16.1% of the applied at 22 days posttreatment and decreased to 14.2% at 30 days. Two minor transformation products, M800H01 and M800H15, each averaged ≤4.7% of the applied. Four discrete unidentified [^{14}C]compounds each averaged ≤3.8% of the applied, and "other unknowns" totaled an average maximum of 1.6%. Extractable [^{14}C]residues decreased from 97.8% of the applied at time 0 to 88.9% at 30 days, while nonextractable [^{14}C]residues increased from 1.5% of the applied to 8.1%. At 30 days posttreatment, $^{14}CO_2$ (NaOH solution, not confirmed) accounted for 0.1% of the applied and volatile organics were not reported.

Based on first-order linear regression analysis (Excel 2003), saflufenacil degraded with a half-life of 29.3 days in the irradiated samples and 52.8 days in the dark controls (reviewer-confirmed study values). The observed DT50 was 22-30 days in the irradiated samples and not determined in the dark controls. The **phototransformation half-life** for saflufenacil is 65.9 days (reviewer-calculated) based on the 12 hour light/12 hour dark cycle used in this study. The intensity of the artificial light (588-605 W/m^2) was 1.01-1.04x higher than the intensity of natural light (584 W/m^2)

at 40°N latitude in the spring; therefore, the **estimated environmental phototransformation half-life** of saflufenacil is ***ca.* 66 days**.

Continuous irradiation. For [phenyl-U-^{14}C]saflufenacil samples, overall [^{14}C] residue recoveries averaged 96.68 ± 1.38% (95.34-100.00%) of the applied in irradiated samples and 98.10 ± 1.05% (95.88-100.00%) in dark control samples. For [uracil-4-^{14}C]saflufenacil samples, overall [^{14}C] residue recoveries averaged 98.48 ± 1.05% (96.34-100.00%) of the applied in irradiated samples and 98.84 ± 0.90% (97.81-100.61%) in dark control samples.

For the irradiated samples (both labels), [^{14}C]saflufenacil decreased from an average 96.91-97.34% of the applied at time 0 to 52.35-57.02% at 15 days (study termination). The only major transformation product, Product 8, was not identified but was characterized as a compound with an intact methyl group on the uracil ring and an intact isopropyl side chain that degraded to M800H01.

Four minor compounds were identified as:

- M800H01 (Product 7);
- M800H07 (Product 4);
- M800H08 (Product 10); and
- 2-chloro-5-[2,6-dioxo-4-(trifluoromethyl)-3,6-dihydropyrimidin-1(2H)-yl]-4-fluorobenzamide (Product 3; chemical name determined by reviewer).

In the phenyl label treatment, Product 8 averaged a maximum of 12.50% of the applied at 11 days posttreatment and decreased to 11.94% at 15 days. In the uracil label, Product 8 averaged a maximum of 16.15% of the applied at 15 days posttreatment. In both label treatments, the four minor transformation products (M800H01, M800H07, M800H08, product 3) each averaged ≤3.13% of the applied. Five or six discrete unidentified [^{14}C]compounds each averaged ≤4.02% of the applied, and "other unknowns" totaled an average maximum of 2.29%. Extractable [^{14}C]residues decreased from 97.92-97.98% of the applied at time 0 to 84.82-85.67% at 15 days, while nonextractable residues increased from 1.48-1.50% of the applied to 8.89-10.60%. Nonextractable [^{14}C]residues were further characterized as 5.89-6.43% fulvic acids, 0.21-1.44% humic acids, and 1.50-3.21% humin. At 15 days posttreatment, volatiles collected from the NaOH trap accounted for 0.69-2.24% of the applied and volatiles collected from the ethylene glycol and H_2SO_4 traps accounted for 0.01-1.60% of the applied.

In the corresponding dark controls (both labels), [^{14}C]saflufenacil decreased from an average of 96.91-97.34% of the applied at time 0 to 70.33-72.56% at 15 days. The only major transformation product, M800H08, averaged a maximum of 13.35-15.43% of the applied at 15 days posttreatment. The three minor identified transformation products, M800H01, M800H07, and Product 3, each averaged ≤2.17% of the applied, and Product 8 averaged a maximum of 3.30-4.20% of the applied. Five or six discrete unidentified [^{14}C]compounds each averaged ≤1.28% of the applied, and "other unknowns" totaled an average maximum of 0.37%. Extractable [^{14}C]residues decreased from 97.92-97.98% of the applied at time 0 to 93.19-95.06% at 15 days, while nonextractable [^{14}C]residues increased from 1.48-1.50% of the applied to 3.74-4.37%. At 15 days posttreatment,

volatiles collected from the NaOH trap accounted for 0.03-0.09% of the applied and volatiles collected from the ethylene glycol and H_2SO_4 traps accounted for ≤0.05% of the applied.

Based on first-order linear regression analysis (Excel 2003), saflufenacil (both labels) degraded with a half-life of 19.0 days in the irradiated samples and 34.4 days in the dark controls (reviewer-calculated). DT50s were not observed in the irradiated samples or dark controls. The **phototransformation half-lives** for saflufenacil are 41.4 and 43.3 days based on the continuous irradiation used in this experiment or 82.8 and 86.5 days based on a 12-hour light/12-hour dark cycle. The intensity of the artificial light (588-605 W/m^2) was 1.01-1.04x higher than the intensity of natural light (584 W/m^2) at 40°N latitude in the spring; therefore, the **estimated environmental phototransformation half-life** of saflufenacil is ***ca.* 83 and 87 days** or *ca.* 84 days for both labels.

A transformation pathway was provided by the study author. Saflufenacil is photolyzed mainly via demethylation at the sulfonylurea side chain to form M800H01, followed by the demethylation of the uracil ring and cleavage of the sulfamide side chain to form Product 3. Following a second pathway, saflufenacil degrades to M800H07 by the opening and cleavage of the uracil ring. In a third pathway, saflufenacil forms an unidentified compound (Product 8), which degrades to M800H01.

The reviewer identifies only two photolytic pathways: formation of minor Product 3/4 for which a structure was proposed via demethylation at the sulfonylurea side chain and formation of Product 8 which degrades to M800H01 by the removal of an aldehyde group.

Under dark conditions, saflufenacil is mainly converted to M800H08 (saturated uracil product). Following a second pathway, saflufenacil degrades to M800H01 by the loss of the methyl group on the sulfonylurea side chain, followed by the loss of the methyl group on the uracil ring and cleavage of the sulfamide side chain to form Product 3.

Results Synopsis

Soil type: Loamy sand soil.
Source of irradiation: Xenon arc lamp.

12 hour light/12 hour dark experiment (reviewer-confirmed study values).

Half-life for Irradiated (588-605 W/m^2): 29.3 days (r^2 = 0.8727).
Half-life for Dark: 52.8 days (r^2 = 0.3997).
Experimental DT50: 66 days
Environmental DT50: 66 days
Major transformation products/ irradiated:

M800H15 (N-{4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino) carbonyl]phenyl}-4-4-4-trifluoro-3,3-dihydroxybutanamide), max 9.6% at 30 DAT.

Major transformation products/ dark:

M800H07 (N-{4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]-phenyl}-N'-methylurea), max 19% at 14 DAT.

M800H08 (N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)tetrahydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-n-methylsulfamide), max 19% at 22 DAT.

Minor transformation products/ irradiated:
- M800H01 (N-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N'-isopropylsulfamide),
- M800H07.
- M800H08.
- CO_2.

Minor transformation products/ dark:
- M800H01.
- M800H15.
- CO_2.

Continuous irradiation experiment (combined labels, reviewer-calculated).
Half-life for Irradiated (588-605 W/m^2): 19.0 days (r^2 = 0.9355).
Half-life for Dark: 34.3 days (r^2 = 0.9715).
Experimental DT50: 42 days
Environmental DT50: 84 days
Major transformation products/ irradiated:
- Product 8 (Structure and chemical name not provided), max 17% at 15 DAT.

Major transformation products/ dark:
- M800H08, max 16% at 15 DAT.

Minor transformation products/ irradiated:
- M800H01.
- M800H07.
- M800H08.
- Product 3 (2-Chloro-5-[2,6-dioxo-4-(trifluoromethyl)-3,6-dihydropyrimidin-1(2H)-yl]-4-fluorobenzamide).
- CO_2.

Minor transformation products/ dark:
- M800H01.
- M800H07.
- Product 3.
- Product 8.
- CO_2.

Study Acceptability: This study is classified as **acceptable** to PMRA and USEPA and **reliable with restrictions** to DEWHA/APVMA due to multiple issues with the study's conduct and write-up. No significant deviations from good scientific practices were noted.

I. MATERIALS AND METHODS

GUIDELINE FOLLOWED: This study was conducted in accordance with USEPA Pesticide Assessment Guidelines, Subdivision N, §161-3, Photodegradation on soil (1982) and SETAC-Europe: Procedures for Assessing the Environmental Fate and Ecotoxicity of Pesticides (1995; pp. 6, 11). Significant deviations from the objectives of USEPA Guideline 835.2410 include:

A major transformation product (≥10% of the applied) was isolated in irradiated samples from the continuous irradiation experiment. Product 8 accounted for a maximum 12.50-16.15% of the applied at 11-15 days posttreatment. However, spectroscopic characterization was inconclusive.

Limits of detection and quantitation were not reported.

COMPLIANCE: This study was conducted in compliance with USEPA FIFRA GLP standards (40 CFR 160; pp. 3, 11). Signed and dated Data Confidentiality, and Certification statements were provided (pp. 2, 5). Signed, but not dated GLP and Quality Assurance statements were provided (pp. 3-4).

A. MATERIALS:

1. Test Material [Phenyl-U-^{14}C]- and [uracil-4-^{14}C]saflufenacil (p. 13).

Chemical Structure: See DER Attachment 1.

Description: Technical grade.

Purities:

Phenyl label:
Radiochemical purity: 99.9% (p. 12).
Lot/Batch No.: 825-1085 (pp. 12, 15).
Analytical purity: Not reported.
Specific activity: 332,400 dpm/µg (p. 12).
Location of the radiolabel: Uniformly in the phenyl ring (p. 13).

Uracil label:
Radiochemical purity: ≥98.99% (p. 12; Figure 1, p. 51).
Lot/Batch No.: 829-1017 (pp. 12, 15).
Analytical purity: Not reported.
Specific activity: 255,600 dpm/µg (p. 12).
Location of the radiolabel: On the fourth carbon of the uracil ring (p. 13).

Storage conditions of test chemicals: Not reported.

Physico-chemical properties of saflufenacil:

Parameter		Value	Comment
Molecular weight (g/Mol)		**500.86**	
Molecular formula		**C17H17ClF4N4O5S**	
Water solubility (mg/L)	pH 4, 20°C: pH 5, 20°C: pH 7, 20°C: pH 9, 20°C:	14 (pH 4, 20°C) 25 (pH 5, 20°C) 2100 (pH 7, 20°C) Not determined due to degradation.	
Vapor pressure	20°C: 25°C:	4.5×10^{-15} Pa 2.0×10^{-14} Pa	Indicates nonvolatility.
UV Absorption	pH 1, pH 7: pH 12:	UV/VIS λmax = 272 nm UV/VIS λmax = 309 nm	Indicates possible susceptibility to direct photolysis at alkaline pH.
pKa		4.41	Indicates neutrality at ambient pH.
K_{ow} log K_{ow}		368 2.56	Indicates low potential to bioconcentrate.
Stability of compound at room temperature		Stable for >2 yrs.	

Data obtained from Genari, 2007 (MRID 47127814); Beery, 2007 (MRID 47127815); Beery, 2006 (MRID 47127817); Vanhook, 2005 (MRID 47127818); Vanhook, 2005a (MRID 47127819); and Kroel, 2005 (MRID 47127821).

2. Soil Characteristics

Table 1: Field information and handling procedures.

Information	Details
Geographic location	A field in Buffalo County, Wisconsin.
Pesticide use history at the collection site	Not reported.
Collection date	November 9, 2004.
Collection procedures	Not reported.
Sampling depth (cm)	Not reported.
Storage conditions	Stored in a water-tight bag in a refrigerator at *ca.* 5°C.
Storage length[1]	118 days.
Soil preparation	Soil sieved (2 mm) and acclimated to room temperature.

Data obtained from pp. 13, 15; Table 2, p. 28 of the study report.
1 Reviewer-calculated based on the collection date and experimental start date (March 7, 2005; p. 11).

Table 2: Properties of the soil.

Property	Details
Soil texture	Loamy sand.
% Sand (>0.05 mm)	88
% Silt (0.002 – 0.05 mm)	6
% Clay (≤0.002 mm)	6
pH (1:1, soil:water)	5.9
Organic carbon (%)[1]	0.8
Organic matter (%)	1.4
CEC (meq/100 g)	8.4
Moisture at 1/3 bar (%)	7.5
Moisture at 15 bar (%)	3.7
Bulk density (disturbed, g/cm^3)	1.49
Biomass (mg microbial C/kg)	Not reported.
Soil taxonomic classification	Not reported.
Soil mapping unit (for EPA)	Not reported.

Data obtained from Table 2, p. 28; Appendix 1, p. 71 of the study report.
1 Reviewer-calculated using the formula: organic carbon (%) = organic matter (%) ÷ 1.724.

3. Details of light source:

Table 3: Artificial light source.

Property	Details
Nature of light source	Xenon arc lamp (Atlas Suntest CPS Plus unit).
Emission wavelength spectrum	300-800 nm.
Light intensity	588-605 W/m^2.
Filters used	Filters to remove light <290 nm.
Relationship to natural sunlight	The spectral energy distribution of the artificial light was comparable to solar irradiation; a graphical comparison was provided in Figure 2, p. 52. The intensity of artificial light (588-605 W/m^2) was 1.01-1.04x higher than the intensity of natural light (584 W/m^2) at 40°N latitude in the spring.

Data obtained from p. 14; Figure 2, p. 52 of the study report.

B. EXPERIMENTAL DESIGN

1. Preliminary Study: No preliminary studies were described.

2. Experimental Design

Table 4: Experimental design.

Parameter			12 hour light/12 hour dark cycle (Phenyl label)	Continuous irradiation (Phenyl and Uracil labels)
Duration of the test			30 days.	15 days.
Condition of soil:		Air dried/fresh:	Fresh.	
		Sterile/Non-sterile:	Non-sterile.	
Test concentrations (mg a.i./kg soil)		Nominal:	0.25 mg a.i./kg soil, equivalent to 400 g a.i./ha.	
		Measured:	0.26 mg a.i./kg soil.	
Dark controls used (Yes/No):			Yes.	
Identity and concentration of co-solvent			Acetonitrile, *ca.* 0.5% (100 µL acetonitrile/*ca.* 20 g soil).	
Pesticide application	Volume of test solution used/treatment:		100 µL/ *ca.* 20 g soil (dry wt.).	
	Method of application:		The test solution was applied dropwise using a Rainin auto pipette to cover most of the soil surface.	
	Is the co-solvent evaporated?		Not reported.	
Test apparatus: Type/Material/Volume			The test system consisted of stainless steel dishes (8.5 cm x 4 cm x 1.1 cm) containing *ca.* 20 g (dry wt.) of treated soil, which were placed in the Suntest unit within a jacketed stainless steel tray (27 cm x 19 cm x 3.5 cm) that narrowed at the top and was covered with a quartz glass plate (34 cm x 26 cm), secured by clamps. The stainless steel tray was maintained at 22 ± 1°C by circulating coolant through the jacket. The tray contained inlet and outlet ports which were connected to a volatile trapping system. The test apparatus is illustrated in Figure 3, p. 53 of the study report. For the dark controls, *ca.* 20 g (dry wt.) of treated soil were placed in 250-mL wide mouth polypropylene centrifuge bottles. The bottles (replicates connected in series) were attached to a volatile trapping system. The soil was maintained in an incubator in the dark at 22 ± 1°C.	
Details of traps for volatile, if any[1]		Irradiated samples	Humidified, CO_2-free air was pulled (flow rate not reported) through the cooling tray and into ethylene glycol, 0.1N H_2SO_4, and 1N NaOH trapping solutions.	
		Dark controls	Ambient, CO_2-free air was pulled (flow rate not reported) through the centrifuge bottles (replicates connected in series) and into ethylene glycol, 0.1N H_2SO_4, and NaOH trapping solutions. The volatile trapping system is illustrated in Figure 4, p. 54 of the study report.	
If no traps were used, is the system closed/open			Traps were used.	
Any indication of the test material adsorbing to the walls of the test apparatus?			Not reported.	

Parameter		12 hour light/12 hour dark cycle (Phenyl label)	Continuous irradiation (Phenyl and Uracil labels)
Experimental Conditions	Temperature: Temperature maintenance method:	22 ± 1°C. Temperature probe embedded in untreated soil of additional plate.	
	Moisture content: Moisture maintenance method	75% of 1/3 bar. Soil samples were weighed each day and water was added equal to the weight lost.	
	Duration of light/darkness:	Irradiated: 12-hour light/12-hour dark cycle. Dark control: continuous darkness.	Irradiated: continuous irradiation. Dark control: continuous darkness.
Other details, if any		None.	

Data were obtained from pp. 14-16; Figures 3-4, pp. 53-54 of the study report.
1 For the experiment performed with the phenyl label using a 12 hour light/12 hour dark cycle, results were only reported for NaOH trapping solution (Table 10, p. 36; Table 13, p. 39). It is not clear if ethylene glycol and 0.1N H_2SO_4 trapping solutions were not included in the volatile trapping system.

3. Supplementary experiments: To identify transformation products, high dose samples were prepared at 2.5 mg a.i./kg (10 times the rate for definitive samples) with a mixture of [phenyl-U-^{14}C]- and [uracil-5-^{13}C]-labeled saflufenacil (1:9, w:w) and samples were continuously irradiated for 15 days (p. 15; Reviewer's Comment #5).

4. Sampling:

Table 5: Sampling details.

Criteria	12 hour light/12 hour dark cycle (Phenyl label only)	Continuous irradiation (Phenyl and Uracil labels)
Sampling intervals of soil samples	0, 6, 14, 22 and 30 days.	0, 1, 3, 7, 11 and 15 days.
Sampling method	Duplicate samples were collected at each sampling interval.	
Method of sampling CO_2 and volatile organic compounds, if any	Volatile traps were collected at each sampling interval, except time 0.	
Sampling intervals/times for: Sterility check, if any: Moisture content:	 Not reported. Each day.	
Sample storage before analysis	Samples, except day 6, were extracted immediately after sampling and all samples were analyzed within 2 days of extraction. Day 6 samples were stored frozen for 1 week prior to extraction.	Samples were extracted immediately after sampling and were analyzed within 2 days of extraction.
Other observations, if any	None.	

Data were obtained from pp. 16, 18, 25; Tables 3-6, pp. 29-32 of the study report.

C. ANALYTICAL METHODS

Extraction/clean up/concentration methods: Soil samples were successively extracted, once with acetonitrile followed by twice with acetonitrile:water (7:3, v:v) using solvent volumes of 50 mL (p. 16; Figure 5, p. 55). For each extraction, the samples were shaken at 300 rpm for 30 minutes, followed by centrifugation at 3000 rpm for 15 minutes. Aliquots (3 x 100 µL) were analyzed by LSC. The extracts were combined, concentrated on a TurboVap to near dryness, reconstituted in 1 mL acetonitrile:water (1:1, v:v), and sonicated for *ca.* 4 minutes. The extract was centrifuged and analyzed by LSC (3 x 5 µL) and HPLC (50 µL).

Volatile residue determination: Triplicate aliquots (1 mL) of the ethylene glycol, H_2SO_4, and NaOH trapping solutions were analyzed by LSC (p. 16). The presence of $^{14}CO_2$ in the NaOH traps was not confirmed.

Nonextractable residue determination: Extracted soil was air-dried, ground and aliquots (3 x *ca.* 0.5 g) were analyzed for total radioactivity by LSC following combustion (p. 16; Figure 5, p. 55). Combustion efficiency was not reported.

Select samples of extracted soil were separated into fulvic and humic acids by extracting with 50 mL of 0.5N NaOH (p. 18). The extracts were acidified to *ca.* pH 2 with 5N HCl and the samples were centrifuged. The supernatant (fulvic acids) were extracted with ethyl acetate (25 mL), evaporated to dryness with a turbo vap and redissolved in acetonitrile:water (1:1, v:v; 100 µL) and analyzed by HPLC. Aliquots of the samples were collected at each step and analyzed by LSC.

Total ^{14}C measurement: Total [^{14}C]residues were determined by summing the concentration of [^{14}C]residues measured in the soil extracts, extracted soil, and volatile trapping solutions (Tables 4-9, pp. 30-35).

Derivatization method, if used: A derivatization method was not employed.

Identification and quantification of parent compound: Soil extracts were analyzed for [^{14}C]saflufenacil using HPLC under the following conditions: YMC ODS-AQ column (250 x 4.6 mm, 5 µm), gradient mobile phase combining (A) 0.5% formic acid in water and (B) 0.5% formic acid in acetonitrile [percent A:B (v:v) at 0-5 minutes, 90:10; 8 minutes, 50:50; 30 minutes, 40:60; 35-40 minutes, 90:10], flow rate 1 mL/minute, with UV (272 nm) and radioactivity detector (pp. 16-17). [^{14}C]Saflufenacil was identified by comparison to an unlabeled reference standard of saflufenacil (purity 99.9%, Rt. *ca.* 20 minutes; Table 1, p. 27; Figure 12, p. 62).

Identification and quantification of transformation products: Transformation products were separated and quantified by HPLC as described for the parent compound (pp. 16-17). Transformation products were identified by chromatography with the following reference standards (Table 1, p. 27; Figure 12, p. 62):

Applicant code	Reg. No.	Lot No.	Purity (%)	Chemical Name
M800H01	4118561	L74-62	98.8	N-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N'-isopropylsulfamide
M800H02	4118416	L67-186	99.2	N'-[2-Chloro-5-(2,6-dioxo-4-(trifluoromethyl)-3,6-dihydropyrimidin-1(2H)-yl)-4-fluorobenzoyl]-N-isopropyl-N-methylsulfamide
M800H07	4775453	L67-196	95.4	N-{4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]phenyl}-N'-methylurea
M800H08	4773881	L74-66	97.2	N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)tetrahydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-n-methylsulfamide
M800H22	5216337	L74-56	94.1	3-[({4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]anilino}carbonyl)(methyl)amino]-4,4,4-trifluorobutanoic acid
M800H15	5264357	L74-80	94.5	N-{4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]phenyl}-4-4-4-trifluoro-3,3-dihydroxybutanamide

Select extracts (7-15 day, continuous irradiation) were analyzed by HPLC (described above) and eluate was collected in fractions to isolate transformation products (p. 17). Areas of radioactivity were purified under isocratic HPLC conditions using a Phenomenex Synergy 4 µ Hydro RP column and a mobile phase of acetonitrile:water with 0.5% formic acid (50:50, v:v). The samples were then analyzed by LC/MS/MS under the following conditions: TSK super ODS column (50 x 4.6 mm, 2 µm), gradient mobile phase of (A) water and (B) acetonitrile with (positive mode) or without (negative mode) 0.1% TFA [percent A:B (v:v) at 0 minutes, 90:10; 10 minutes, 30:70; 10.5-15 minutes, 90:10], flow rate 0.5 mL/minute, with MS electrospray ionization in positive and negative ion mode (Figures 14-18, pp. 64-68).

Select extracts (15 day, high dose samples) were analyzed by HPLC and purified as described above and transformation products were identified by proton NMR characterization (p. 17; Appendix 3, pp. 80-110).

Detection limits (LOD, LOQ) for the parent compound: Detection limits were not reported.

Detection limits (LOD, LOQ) for the transformation products: Detection limits were not reported.

II. RESULTS AND DISCUSSION

A. TEST CONDITIONS: Experimental conditions were reported to be maintained throughout the study at a soil temperature of 22 ± 1°C and a soil moisture of 75% of 1/3 bar; supporting data were not provided (p. 20). The soil viability was not reported.

B. MASS BALANCE: 12 hour light/12 hour dark cycle. For [phenyl-U-^{14}C]saflufenacil samples irradiated on a 12 hour light/12 hour dark cycle, overall [^{14}C] residue recoveries averaged 95.9 ±

2.2% (92.0-100.0%) of the applied in irradiated samples and 96.8 ± 1.8% (94.3-100.0%) in dark control samples (Table 4, p. 30; Table 7, p. 33; DER Attachment 2). There was a pattern of slight decline in recovery in the irradiated samples, decreasing from 98.4-100.0% of the applied at time 0 to 92.0-94.3% at 30 days (study termination).

Continuous irradiation. For [phenyl-U-^{14}C]saflufenacil samples continuously irradiated, overall [^{14}C] residue recoveries averaged 96.68 ± 1.38% (95.34-100.00%) of the applied in irradiated samples and 98.10 ± 1.05% (95.88-100.00%) in dark control samples (Table 5, p. 31; Table 8, p. 34; DER Attachment 2). For [uracil-4-^{14}C]saflufenacil samples continuously irradiated, overall [^{14}C] residue recoveries averaged 98.48 ± 1.05% (96.34-100.00%) of the applied in irradiated samples and 98.84 ± 0.90% (97.81-100.61%) in dark control samples (Table 6, p. 32; Table 9, p. 35; DER Attachment 2).

Table 6a: Phototransformation of [phenyl-U-^{14}C]saflufenacil, expressed as percentage of applied radioactivity (mean ± sd, n = 2), on loamy sand soil (12-hour light/12-hour dark cycle).

Compound		Sampling intervals (days)				
		0	6	14	22	30
Saflufenacil (BAS 800 H)	Irradiated	97.8 ± 0.9	69.1 ± 0.1	59.4 ± 6.6	58.0 ± 0.6	43.1 ± 4.3
	Dark		77.5 ± 1.6	51.7 ± 5.4	62.4 ± 2.3	65.2 ± 8.9
M800H01 (Product 7; Rt. 17 minutes)	Irradiated	--	0.3 ± 0.1	--	--	1.6 ± 1.6
	Dark		2.1 ± 0.1	4.3 ± 1.6	--	--
M800H07 (Product 4; Rt. 14.3 minutes)	Irradiated	--	--	2.2 ± 0.4	1.8 ± 0.1	3.0 ± 0.5
	Dark		6.8 ± 0.3	17.3 ± 3.0	3.5 ± 2.5	2.1 ± 0.4
M800H08 (Product 10; Rt. 18.8 minutes)	Irradiated	--	1.7 ± 0.1	1.8 ± 1.1	1.8 ± 0.3	--, 1.7
	Dark		3.0 ± 0.0	1.9 ± 1.2	16.1 ± 3.9	14.2 ± 5.7
M800H15 (Product 5; Rt. 15.2 minutes)	Irradiated	--	4.2 ± 0.6	6.8 ± 1.3	6.9 ± 0.5	8.0 ± 2.3
	Dark		0.5 ± 0.1	4.7 ± 1.0	1.4 ± 0.4	1.7 ± 0.4
Polar Product	Irradiated	--	--	--, 0.3	--	--
	Dark		--	--	--	--
Product at 13 minutes	Irradiated	--	2.4 ± 0.1	--	--	--
	Dark		0.1 ± 0.0	1.2 ± 1.3	0.2, --	--
Product at 13.4 minutes	Irradiated	--	1.9 ± 0.0	5.4 ± 1.1	4.8 ± 1.1	8.0 ± 1.8
	Dark		0.2 ± 0.1	1.4 ± 0.5	0.3 ± 0.1	0.2 ± 0.1
Product 6 at 16.4 minutes	Irradiated	--	0.3 ± 0.0	0.5 ± 0.1	0.4 ± 0.1	--
	Dark		0.7 ± 0.1	3.5 ± 1.1	2.1 ± 0.4	1.7 ± 0.9
Product 8 at 17.4 minutes	Irradiated	--	4.5 ± 0.6	5.4 ± 0.1	6.2 ± 0.6	4.0 ± 2.1
	Dark		1.1 ± 0.1	3.5 ± 2.8	3.8 ± 0.6	3.8 ± 1.3
Product 9 at 18.2 minutes	Irradiated	--	0.4 ± 0.3	--	--	--, 0.6
	Dark		-	--	--	--
Other Unknowns	Irradiated	--	--	--, 2.3	0.5 ± 0.6	6.6 ± 4.0
	Dark		1.4 ± 0.1	1.6 ± 0.2	0.9 ± 0.4	0.1 ± 0.0
Total extractable residues	Irradiated	97.8 ± 0.9	84.7 ± 0.7	82.7 ± 0.8	80.1 ± 0.6	75.3 ± 1.6
	Dark		93.3 ± 2.0	90.9 ± 1.6	90.2 ± 0.7	88.9 ± 0.2
Nonextractable residues	Irradiated	1.5 ± 0.1	11.2 ± 0.2	12.9 ± 0.6	14.4 ± 1.0	17.1 ± 0.1
	Dark		1.9 ± 0.1	4.4 ± 0.1	7.2 ± 1.2	8.1 ± 1.1
Volatile organics	Irradiated	Not reported.				
	Dark					
CO_2[1, 2]	Irradiated	NA	0.2	0.4	0.5	0.8
	Dark		--	--	0.1	0.1
Total % recovery	Irradiated	99.2 ± 1.1	96.1 ± 0.5	96.0 ± 0.2	95.0 ± 0.3	93.2 ± 1.6
	Dark		95.2 ± 1.8	95.3 ± 1.4	97.5 ± 0.5	97.0 ± 0.8

Data obtained from Table 4, p. 30; Table 7, p. 33; Table 10; p. 36; Table 13, p. 39 of the study report and DER Attachment 2.

1 Collected from NaOH trap; not confirmed as carbon dioxide.

2 Irradiated soil samples connected to single volatile trapping system. Duplicate dark control samples were connected in series to volatile trapping system. Only single values reported by study author.

--: Cells in the original data tables were filled with dashes; presumed to mean not detected.

NA: Not applicable.

Table 6b: Phototransformation of [phenyl-U-^{14}C]saflufenacil, expressed as percentage of applied radioactivity (mean ± sd, n = 2), on loamy sand soil (continuous irradiation).

Compound		Sampling intervals (days)					
		0	1	3	7	11	15
Saflufenacil (BAS 800 H)	Irradiated	97.34 ± 0.65	87.30 ± 0.43	78.86 ± 3.20	69.00 ± 0.09	60.39 ± 1.77	57.02 ± 1.43
	Dark		94.00 ± 2.05	91.61 ± 0.59	86.37 ± 0.46	80.23 ± 0.96	72.56 ± 0.98
M800H08 (Product 10)	Irradiated	--	0.12 ± 0.06	--	--	--, 0.10	1.19 ± 0.01
	Dark		0.60 ± 0.08	1.87 ± 0.01	5.80 ± 0.46	9.70 ± 0.01	13.35 ± 1.10
Product 8	Irradiated	--	2.17 ± 0.15	7.00 ± 1.14	9.81 ± 0.59	12.50 ± 0.40	11.94 ± 0.47
	Dark		0.31 ± 0.05	0.52 ± 0.12	1.42 ± 0.09	2.33 ± 0.09	3.30 ± 0.47
Product 3	Irradiated	--	0.34 ± 0.06	0.68 ± 0.16	1.42 ± 0.02	2.20 ± 0.06	2.85 ± 0.15
	Dark		--	0.14 ± 0.02	--	0.15 ± 0.02	0.09 ± 0.06
M800H07 (Product 4)	Irradiated	0.46 ± 0.04	0.62 ± 0.03	1.11 ± 0.05	2.06 ± 0.13	3.13 ± 0.11	2.45 ± 0.01
	Dark		0.50 ± 0.05	0.46 ± 0.01	0.43 ± 0.01	0.38 ± 0.06	0.47 ± 0.08
M800H01 (Product 7)	Irradiated	--, 0.23	0.12 ± 0.01	0.19 ± 0.04	0.28 ± 0.09	0.42 ± 0.18	0.89 ± 0.07
	Dark		0.08 ± 0.07	0.20 ± 0.06	0.65 ± 0.15	1.15 ± 0.25	1.64 ± 0.14
Unidentified Minor Compounds[1]	Irradiated	--	1.97 ± 0.11	2.01 ± 0.79	3.50 ± 0.10	6.17 ± 0.59	6.21 ± 0.59
	Dark		0.18 ± 0.09	0.23 ± 0.04	0.77 ± 0.02	1.19 ± 0.18	1.81 ± 0.01
Others	Irradiated	--	0.09 ± 0.11	0.34 ± 0.08	0.45 ± 0.02	0.85 ± 0.03	2.29 ± 0.03
	Dark		--	--	0.16 ± 0.01	0.36 ± 0.03	--
Total extractable residues	Irradiated	97.92 ± 0.78	92.72 ± 0.00	90.17 ± 0.94	86.51 ± 0.59	85.69 ± 1.00	84.82 ± 0.61
	Dark		95.65 ± 2.28	95.02 ± 0.78	95.57 ± 0.25	95.47 ± 0.31	93.19 ± 0.59
Nonextractable residues	Irradiated	1.48 ± 0.08	3.93 ± 0.41	6.08 ± 1.80	8.77 ± 0.30	9.82 ± 0.76	10.60 ± 0.23
	Dark		1.71 ± 0.20	2.56 ± 0.15	2.61 ± 0.16	3.02 ± 0.18	4.37 ± 0.25
Ethylene glycol and H_2SO_4 traps[2]	Irradiated	NA	--	--	--	--	0.01
	Dark		--	--	--	--	--
NaOH trap[2]	Irradiated	NA	0.03	0.11	0.27	0.45	0.69
	Dark		--	--	0.01	0.02	0.03
Total % recovery	Irradiated	99.40 ± 0.86	96.69 ± 0.40	96.35 ± 0.85	95.55 ± 0.29	95.98 ± 0.25	96.12 ± 0.37
	Dark		97.36 ± 2.09	97.57 ± 0.93	98.19 ± 0.41	98.51 ± 0.13	97.60 ± 0.34

Data obtained from Table 5, p. 31; Table 8, p. 34; Table 11; p. 37; Table 14, p. 40 of the study report and DER Attachment 2.

1 Sum of up to 5 compounds (Products 1a, 2, 5, 6, 9); none accounting for >2.53% of the applied.

2 Irradiated soil samples connected to single volatile trapping system. Duplicate dark control samples were connected in series to volatile trapping system. Only single values reported by study author.

--: Cells in the original data tables were filled with dashes; presumed to mean not detected.

NA: Not applicable.

Table 6c: Phototransformation of [uracil-4-^{14}C]saflufenacil, expressed as percentage of applied radioactivity (mean ± sd, n = 2), on loamy sand soil (continuous irradiation).

Compound		Sampling intervals (days)					
		0	1	3	7	11	15
Saflufenacil (BAS 800 H)	Irradiated	96.91 ± 0.68	91.81 ± 2.38	76.25 ± 1.28	72.03 ± 4.32	61.88 ± 6.51	52.35 ± 2.42
	Dark		94.58 ± 0.85	91.51 ± 0.60	82.64 ± 0.81	75.38 ± 0.02	70.33 ± 0.16
M800H08 (Product 10)	Irradiated	--	0.10 ± 0.05	0.27 ± 0.04	0.23 ± 0.15	0.49 ± 0.23	0.84 ± 0.30
	Dark		0.80 ± 0.25	3.24 ± 0.32	7.44 ± 0.58	11.86 ± 0.20	15.43 ± 0.72
Product 8	Irradiated	--	1.90 ± 0.37	4.87 ± 0.24	7.03 ± 1.60	13.01 ± 0.95	16.15 ± 1.68
	Dark		0.59 ± 0.04	1.42 ± 0.01	2.38 ± 0.29	3.35 ± 0.36	4.20 ± 0.01
Product 3	Irradiated	--	0.31 ± 0.01	0.99 ± 0.07	1.07 ± 0.28	1.53 ± 0.53	2.73 ± 0.58
	Dark		--	--	0.22 ± 0.08	0.60 ± 0.05	0.25 ± 0.01
M800H07 (Product 4)	Irradiated	0.62 ± 0.02	0.86 ± 0.11	1.21 ± 0.03	1.43 ± 0.13	1.84 ± 0.30	2.98 ± 0.47
	Dark		0.68 ± 0.05	0.67 ± 0.10	0.67 ± 0.08	--, 0.28	0.56 ± 0.04
M800H01 (Product 7)	Irradiated	0.45 ± 0.03	0.14 ± 0.01	0.29 ± 0.01	0.18 ± 0.05	0.24 ± 0.14	0.59 ± 0.05
	Dark		0.23 ± 0.04	0.75 ± 0.01	1.42 ± 0.02	1.76 ± 0.01	2.17 ± 0.16
Unidentified Minor Compounds[1]	Irradiated	--	1.60 ± 0.11	5.95 ± 0.42	7.95 ± 1.62	6.78 ± 2.09	8.97 ± 1.78
	Dark		0.19 ± 0.07	0.45 ± 0.07	0.88 ± 0.13	1.59 ± 0.01	1.78 ± 0.06
Others	Irradiated	--	--	--	0.15 ± 0.01	0.30 ± 0.06	1.07 ± 0.11
	Dark		--	--	--	0.34 ± 0.06	0.37 ± 0.01
Total extractable residues	Irradiated	97.98 ± 0.73	96.71 ± 1.85	89.83 ± 1.48	90.05 ± 0.51	86.04 ± 2.30	85.67 ± 2.35
	Dark		97.07 ± 0.50	98.02 ± 0.88	95.63 ± 0.38	95.00 ± 0.44	95.06 ± 1.12
Nonextractable residues	Irradiated	1.50 ± 0.01	2.61 ± 1.47	8.36 ± 1.60	6.02 ± 0.68	8.20 ± 1.32	8.89 ± 1.35
	Dark		1.24 ± 0.04	1.94 ± 0.01	2.49 ± 0.13	3.07 ± 0.17	3.74 ± 0.06
Ethylene glycol and H_2SO_4 traps[2]	Irradiated	--	0.07	0.46	0.89	1.23	1.60
	Dark		--	0.01	0.01	0.03	0.05
NaOH trap[2]	Irradiated	--	0.03	0.22	0.73	1.56	2.24
	Dark		--	0.01	0.04	0.06	0.09
Total % recovery	Irradiated	99.48 ± 0.74	99.41 ± 0.37	98.86 ± 0.11	97.69 ± 0.17	97.03 ± 0.98	98.39 ± 0.99
	Dark		98.30 ± 0.54	99.98 ± 0.89	98.17 ± 0.51	98.17 ± 0.28	98.94 ± 1.05

Data obtained from Table 6, p. 32; Table 9, p. 35; Table 12; p. 38; Table 15, p. 41 of the study report and DER Attachment 2.
1 Sum of up to 6 compounds (Products 1a, 1b, 2, 5, 6, 9); none accounting for >4.56% of the applied.
2 Irradiated soil samples connected to single volatile trapping system. Duplicate dark control samples were connected in series to volatile trapping system. Only single values reported by study author.
--: Cells in the original data tables were filled with dashes; presumed to mean not detected.
NA: Not applicable.

C. TRANSFORMATION OF PARENT COMPOUND: 12 hour light/12 hour dark cycle. For the irradiated samples, [phenyl-U-^{14}C]saflufenacil decreased from an average 97.8% of the applied at time 0 to 58.0% at 22 days and was 43.1% at 30 days (study termination; Table 13, p. 39). In the corresponding dark controls, [^{14}C]saflufenacil decreased unsteadily from an average 97.8% of the applied at time 0 to 51.7% at 14 days and was 65.2% at 30 days (Table 10, p. 36).

Continuous irradiation. [Phenyl-U-^{14}C]saflufenacil decreased from an average 97.34% of the applied at time 0 to 57.02% in irradiated samples and 72.56% in dark controls at 15 days (Table 11,

p. 37; Table 14, p. 40; DER Attachment 2). [Uracil-4-^{14}C]saflufenacil decreased from an average 96.91% of the applied at time 0 to 52.35% in irradiated samples and 70.33% in dark controls at 15 days (Table 12, p. 38; Table 15, p. 41).

HALF-LIFE: 12 hour light/12 hour dark cycle. Based on first-order linear regression analysis (Excel 2003), saflufenacil degraded with a half-life of 29.3 days in the irradiated samples and 52.8 days in the dark controls (DER Attachment 2). The observed DT50 was 22-30 days in the irradiated samples and not determined in dark controls.

Continuous irradiation. Based on first-order linear regression analysis (Excel 2003) and combined phenyl and uracil labels, saflufenacil degraded with a reviewer-calculated half-life of 19.0 days in the irradiated samples and 34.4 days in the dark controls (DER Attachment 2). DT50s were not observed in irradiated samples or dark controls. The half-lives calculated are of uncertain value since they are extrapolated beyond the duration of the study.

Equivalent half-lives were reported in the study for individual labels. Half-lives for combined labels and/or corrected for dark controls were not reported in the study.

Half-lives/DT50/DT90

Test system	First order linear [1]			Observed DT50 (days)	Observed DT90 (days)
	Half-life (days)	Regression equation	r^2		
Phenyl label; 12 hour light/12 hour dark cycle					
Irradiated	29.3	y = -0.0236x + 4.4836	0.8727	22-30	--
Dark	52.8	y = -0.0131x + 4.4251	0.3997	--	--
Phenyl label; continuous irradiation					
Irradiated	20.1	y = -0.0344x + 4.5111	0.9439	--	--
Dark	37.6	y = -0.0184x + 4.5747	0.9808	--	--
Uracil label; continuous irradiation					
Irradiated	17.9	y = -0.0386x + 4.5355	0.9345	--	--
Dark	31.7	y = -0.0219x + 4.5733	0.9951	--	--
Combined labels; continuous irradiation					
Irradiated	19.0	y = -0.0365x + 4.5233	0.9355	--	--
Dark	34.3	y = -0.0202x + 4.5740	0.9715	--	--

1 Half-lives were calculated by the reviewer using data obtained from Tables 10-15, pp. 36-41 of the study report (DER Attachment 2). Values for individual labels are consistent with those reported by the study author.
--: Not determined.

The reviewer-calculated experimental or **phototransformation half-life** for [^{14}C]saflufenacil, determined using the equation

(Ln 2) ÷ [(Ln 2/dark control half-life) - (Ln 2/irradiated half-life)]

is 65.9 days based on the 12 hour light/12 hour dark cycle used in the phenyl label-only experiment. The reviewer-calculated phototransformation half-life is 43.3 days for the phenyl label and 41.4 days for the uracil label based on the continuous irradiation used in the second experiment or 42 days (combined labels).

The intensity of artificial light (588-605 W/m^2) was 1.01-1.04x higher than the intensity of natural light (584 W/m^2) at 40°N latitude in the spring (p. 14). Because these intensities are approximately equivalent and the intensity of natural light at 40°N latitude in spring is less than in summer, the phototransformation half-lives approximate **environmental phototransformation half-lives** of saflufenacil, at **66 days** for the light/dark cycle experiment and at 83 days (phenyl) and 87 days (uracil) or **84 days** (combined labels) for the continuous irradiation experiment.

TRANSFORMATION PRODUCTS: 12 hour light/12 hour dark cycle. Four major and minor transformation products were identified (Table 1, p. 27):

- N-{4-chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]phenyl}-4-4-4-trifluoro-3,3-dihydroxybutanamide (M800H15);
- N-{4-chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino) carbonyl]phenyl}-N'-methylurea (M800H07);
- N'-[2-chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)tetrahydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-n-methylsulfamide (M800H08); and
- N-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N'-isopropylsulfamide (M800H01).

M800H15, a major transformation product in irradiated samples, reached a maximum average of 8.0% (6.4% and 9.6% replicates) of the applied at 30 days in irradiated samples and 4.7% at 14 days in dark controls (Table 10, p. 36; Table 13, p. 39; DER Attachment 2). M800H07 and M800H08, major transformation products in the dark controls, were maximum averages of 17.3% (14 days) and 16.1% (22 days) of the applied, respectively, decreasing to 2.1% and 14.2%, respectively, at study termination (30 days). In irradiated samples, M800H07 and M800H08 accounted for maximums of 3.0% and 1.8% of the applied, respectively. One minor transformation product, M800H01 was identified in the irradiated samples and dark controls at a maximum 1.6% and 4.3%, respectively. Six other minor transformation products were isolated in the irradiated samples, each accounted for average maximums ≤8.0% of the applied. Four other minor transformation products were isolated in the dark controls; each accounted for an average maximum ≤3.8% of the applied. Other unknowns (not further identified by study author) reached maximum averages of 6.6% in irradiated samples and 1.6% in dark controls.

Continuous irradiation. Two major transformation products were isolated. One major transformation product in dark controls was identified as N'-[2-chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)tetrahydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-n-methylsulfamide (product 10; M800H08; Table 1, p. 27). In irradiated samples, product 8 was isolated as a major transformation product. The compound was not identified. LC/MS/MS and NMR characterization indicated that the methyl group on the uracil ring and the isopropyl side chain are intact (p. 23). Product 8 eventually converts to the demethylation product, M800H01, especially during processed of storage, handling, and/or analysis (p. 24). Three minor compounds were identified as:

- N-[2-chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N'-isopropylsulfamide (product 7, M800H01);
- N-{4-chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]phenyl}-N'-methylurea (product 4, M800H07); and
- 2-Chloro-5-[2,6-dioxo-4-(trifluoromethyl)-3,6-dihydropyrimidin-1(2H)-yl]-4-fluorobenzamide (product 3; chemical name determined by reviewer).

In **[phenyl-U-^{14}C]saflufenacil-treated samples**, M800H08 was a major transformation product in the dark controls, reaching a maximum average of 13.35% of the applied at 15 days and was a maximum 1.19% at 15 days in irradiated samples (Table 11, p. 37; Table 14, p. 40; DER Attachment 2). In irradiated samples, product 8 (unidentified compound) was a major transformation product, reaching a maximum average of 12.50% at 11 days and was 11.94% at 15 days and was a maximum 3.30% in dark controls. Identified minor transformation products M800H01 (product 7), M800H07 (product 4) and product 3 each reached maximum averages ≤3.13% in irradiated samples and ≤1.64% in dark controls. Unidentified minor transformation products (up to 5 compounds) each accounted for maximum averages ≤2.37% in irradiated samples and ≤1.28% in dark controls. Peaks reported by the study author as "others" accounted for maximum averages of 2.29% in irradiated samples and 0.36% in dark controls.

In **[uracil-4-^{14}C]saflufenacil-treated samples**, M800H08 was a major transformation product in the dark controls, reaching a maximum average of 15.43% of the applied at 15 days and was a maximum 0.84% at 15 days in irradiated samples (Table 12, p. 38; Table 15, p. 41; DER Attachment 2). In irradiated samples, product 8 (unidentified compound) was a major transformation product, reaching a maximum average of 16.15% at 15 days and was a maximum 4.20% in dark controls. Identified minor transformation products M800H01 (product 7), M800H07 (product 4) and product 3 each reached maximum averages ≤2.98% in irradiated samples and ≤2.17% in dark controls. Unidentified minor transformation products (up to 6 compounds) each accounted for maximum averages ≤4.02% in irradiated samples and ≤1.13% in dark controls. Peaks reported by the study author as "others" accounted for maximum averages of 1.07% in irradiated samples and 0.37% in dark controls.

Table 7: Chemical names and CAS numbers for the transformation products of saflufenacil.

Applicants Code Name	CAS Number	Chemical Name	Chemical Formula	MW (g/mol)	Smiles String
M800H01	--[1]	N-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N'-isopropylsulfamide	$C_{16}H_{15}ClF_4N_4O_5S$	486.83	--
M800H07	--	N-{4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]phenyl}-N'-methylurea	$C_{13}H_{18}ClFN_4O_4S$	380.83	--
M800H08	--	N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)tetrahydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-n-methylsulfamide	$C_{17}H_{19}ClF_4N_4O_5S$	502.87	--
M800H15	--	N-{4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]phenyl}-4-4-4-trifluoro-3,3-dihydroxybutanamide	$C_{15}H_{18}ClF_4N_3O_6S$	479.84	--
Product 3	--	2-Chloro-5-[2,6-dioxo-4-(trifluoromethyl)-3,6-dihydropyrimidin-1(2H)-yl]-4-fluorobenzamide[2]	--	--	--

Data obtained from Table 1, p. 27; Figure 17, p. 67 of the study report.
1 Not reported.
2 Chemical name determined by reviewer using ISIS/Draw with ACD/Name add-in.

NONEXTRACTABLE AND EXTRACTABLE RESIDUES: 12 hour light/12 hour dark cycle. For irradiated samples, total extractable [^{14}C]residues decreased from 97.8% of the applied at time 0 to 75.3% at 30 days, while nonextractable residues increased from 1.5% of the applied to 17.1% (Table 7, p. 33; DER Attachment 2). For dark controls, total extractable [^{14}C]residues decreased from 97.8% of the applied at time 0 to 88.9% at 30 days, while nonextractable residues increased from 1.5% of the applied to 8.1% (Table 4, p. 30).

In irradiated samples at study termination, nonextractable residues accounting for 17.0-17.1% of the applied were separated into fulvic acids, humic acids and humin. Fulvic acids, humic acids and humin were 9.8-10.1%, 1.4-1.5% and 5.4-5.9% of the applied, respectively (Table 23, p. 49).

Continuous irradiation. For irradiated samples (both labels), total extractable [^{14}C]residues decreased from 97.92-97.98% of the applied at time 0 to 84.82-85.67% at 15 days, while nonextractable residues increased from 1.48-1.50% of the applied to 8.89-10.60% (Tables 8-9, pp. 34-35; DER Attachment 2). For dark controls (both labels), total extractable [^{14}C]residues decreased from 97.92-97.98% of the applied at time 0 to 93.19-95.06% at 15 days, while nonextractable residues increased from 1.48-1.50% of the applied to 3.74-4.37% (Tables 5-6, pp. 31-32).

In irradiated samples at study termination, nonextractable residues accounting for 10.43-10.76% of the applied for [phenyl-U-^{14}C]saflufenacil and 7.93-9.84% for [uracil-4-^{14}C]saflufenacil were separated into fulvic acids, humic acids and humin. For [phenyl-U-^{14}C]saflufenacil, fulvic acids were 5.89-6.27%, humic acids were 1.33-1.44% and humin was 3.06-3.21% (Table 23, p. 49). For

[uracil-4-^{14}C]saflufenacil, fulvic acids were 6.22-6.43%, humic acids were 0.21-0.81% and humin was 1.5-2.6% (Table 23, p. 49).

VOLATILIZATION: 12 hour light/12 hour dark cycle. Radioactivity collected in the NaOH trap, assumed to be $^{14}CO_2$ by the study author, accounted for 0.8% of the applied in irradiated samples and 0.1% in dark controls at study termination (30 days; Table 4, p. 30; Table 7, p. 33). Volatile organics were not reported.

Continuous irradiation. For [phenyl-U-^{14}C]saflufenacil-treated samples, volatiles collected from the NaOH trap and from the ethylene glycol and H_2SO_4 traps accounted for 0.69% and 0.01% of the applied, respectively, in irradiated samples at study termination (15 days; Table 8, p. 34). In corresponding dark controls, volatiles from the NaOH traps accounted for 0.03% of the applied at study termination and volatiles were not detected in the ethylene glycol and H_2SO_4 traps (Table 5, p. 31).

For [uracil-4-^{14}C]saflufenacil-treated samples, volatiles collected from the NaOH trap and from the ethylene glycol and H_2SO_4 traps accounted for 2.24% and 1.60% of the applied, respectively, in irradiated samples at study termination (15 days; Table 9, p. 35). In corresponding dark controls, volatiles collected from the NaOH trap and from the ethylene glycol and H_2SO_4 traps accounted for 0.09% and 0.05% of the applied, respectively, at study termination (Table 6, p. 32).

TRANSFORMATION PATHWAY: An illustration of the transformation pathway was provided by the study author (Figure 19, p. 69). Saflufenacil is photolyzed mainly via demethylation at the sulfonylurea side chain to form M800H01, followed by the demethylation of the uracil ring and cleavage of the sulfamide side chain to form product 3 (p. 25; Reviewer's comment #1). Following a second pathway, saflufenacil degrades to M800H07 by the opening and cleavage of the uracil ring. In a third pathway, saflufenacil forms an unidentified compound (product 8), which degrades to M800H01.

The reviewer disagrees with the study author that degradation to M07 by the opening and cleavage of the uracil ring is a photolytic pathway. This is most likely a hydrolytic pathway only (and should also include alternate formation of M15) given these were formed in very small amounts under continuous irradiation relative to the dark controls. There are likely only two photolytic pathways: formation of minor Product 3/4 for which a structure was proposed via demethylation at the sulfonylurea side chain and formation of Product 8 which degrades to M800H01 by the removal of an aldehyde group.

Under dark conditions, saflufenacil is mainly converted to M800H08 (saturated uracil product; p. 25; Figure 19, p. 69). Following a second pathway, saflufenacil degrades to M800H01 by the loss of the methyl group on the sulfonylurea side chain, followed by the loss of the methyl group on the uracil ring and cleavage of the sulfamide side chain to form product 3 (Reviewer's comment #1).

D. SUPPLEMENTARY EXPERIMENT-RESULTS: The results from the high dose experiment were incorporated into the definitive study.

III. STUDY DEFICIENCIES

1. A major transformation product (Product 8; Rt. 17.93-18.25) in irradiated samples in the continuous irradiation experiment was not identified (Figures 7-11, pp. 57-61). USEPA recommends that major photolysis transformation products (≥10% of the applied) be identified. The registrant attempted to identify this compound; however, results from spectroscopic characterization were inconclusive. Product 8 degraded to the demethylation product, M800H01, during the processes of storage, handling, and analysis (p. 24). LC/MS/MS and NMR characterization indicated that the methyl group on the uracil ring and the isopropyl side chain are intact (pp. 23-24; Figure 15, p. 65). The results from the 12 hours irradiation/ 12 hours dark experiment indicate the photoproduct under field conditions may not form to the extent seen under continuous irradiation.

2. Limits of detection and quantitation were not reported. This deficiency does not affect the study classification.

IV. REVIEWER'S COMMENTS

1. The text and figures are not in agreement regarding several compounds. In the text and illustration of the transformation pathway, the study author reports M800H01 degrades to Product 4; however, the structure shown corresponds to Product 3 based on mass spectrum (pp. 24-25; Figure 17, p. 67; Figure 19, p. 69). Product 4 is identified as M800H07 based on mass spectrum (Figure 18, p. 68). The structure presented in Figure 18 is referred to in text as Product 5; however, in the text, Product 5 is an unidentified compound (p. 24).

2. Supporting data were not provided to verify the temperature or vitality of the test systems.

3. Saflufenacil appeared to increase in concentration from days 14-30 in the 30-day dark control. This might be explained by release of bound saflufenacil residues. The increase of bound residues over time does not support this conclusion; however, it could be complicated by increased binding of transformation products. The characterization of bound residues in the fulvic acid fraction at various time points would have helped to clarify the matter.

4. The loamy sand soil used in this experiment was also used in an aerobic soil metabolism experiment (p. 13).

5. The application rate of 0.25 µg a.i./g soil, assuming a soil segment depth of 1 cm, corresponds to 400 g a.i./ha, which is the maximum recommended field rate of saflufenacil (p. 15).

6. A single volatile trapping system was used for each cooling tray holding irradiated samples and for duplicate samples in the dark controls; Subdivision N guidelines recommend that samples be connected individually to volatile trapping systems.

7. The high dose samples were treated with a mixture of [phenyl-U-^{14}C]saflufenacil and [uracil-5-^{13}C]saflufenacil (p. 15). The position of the radiolabel in the uracil ring differs from the

definitive study (p. 26). In the definitive study the radiolabel is positioned on the fourth carbon in the uracil ring (p. 13). The uracil-labeled test substance for the high dose study has a lot no. of 828-1085.

V. REFERENCES

1. Panek, M. 2006. Hydrolysis of ^{14}C-BAS 800 H. Unpublished study performed, sponsored, and submitted by BASF Corporation, Research Triangle Park, North Carolina. BASF Reg. Doc. No.: 2005/7004259. BASF Study No.: 132680.

2. Ta, C., and J. Trollinger. 2007. Aqueous photolysis of 14C-BAS 800 H. Unpublished study performed, sponsored, and submitted by BASF Corporation, Research Triangle Park, North Carolina. BASF Study Protocol ID No.: 132683. BASF Doc. ID No.: 2007/7009413.

3. U.S. Environmental Protection Agency. 1982. Pesticide Assessment Guidelines, Subdivision N, Chemistry: Environmental Fate, Section 161-3. Phototransformation studies. Office of Pesticide and Toxic Substances, Washington, DC. EPA 540/9-82-021.

4. U.S. Environmental Protection Agency. 1989. FIFRA Accelerated Reregistration, Phase 3 Technical Guidance. Office of the Prevention, Pesticides, and Toxic Substances, Washington, DC. EPA 540/09-90-078.

5. U.S. Environmental Protection Agency. 1993. Pesticide Registration Rejection Rate Analysis - Environmental Fate. Office of the Prevention, Pesticides, and Toxic Substances, Washington, DC. EPA 738-R-93-010.

Attachment 1: Structures of Parent Compound and Transformation Products

Saflufenacil [BAS 800 H, CL No. 433379, 4054449, AC 433,379]

IUPAC Name: N′-{2-Chloro-4-fluoro-5-[1,2,3,6-tetrahydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)pyrimidin-1-yl]benzoyl}-N-isopropyl-N-methylsulfamide. N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-N-methylsulfamide.

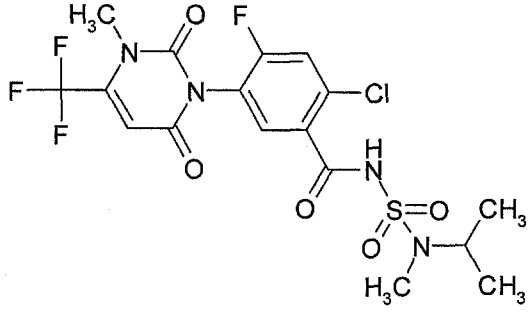
CAS Name: 2-Chloro-5-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-4-fluoro-N-[[methyl(1-methylethyl)amino]sulfonyl]benzamide.

CAS Number: 372137-35-4.

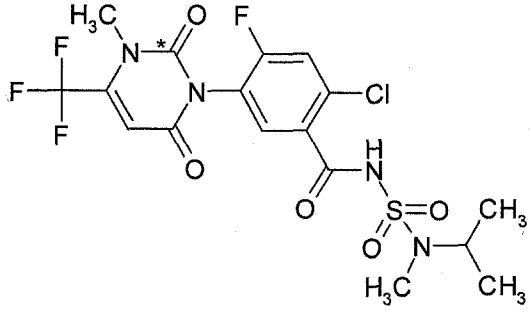
SMILES String: N1(C)C(C(F)(F)F)=CC(=O)N(C2=CC(C(=O)NS(=O)(=O)N(C)C(C)C)=C(Cl)C=C2F)C1=O (EPI Suite v3.12 SMILES string from ISIS .MOL).

Empirical formula: $C_{17}H_{17}ClF_4N_4O_5S$ **Molecular formula:** $C_{17}H_{17}ClF_4N_4O_5S$

Unlabeled



[Uracil-4-^{14}C]Saflufenacil



* = Location of the radiolabel.

Saflufenacil [BAS 800 H, CL No. 433379, 4054449, AC 433,379]

IUPAC Name: N′-{2-Chloro-4-fluoro-5-[1,2,3,6-tetrahydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)pyrimidin-1-yl]benzoyl}-N-isopropyl-N-methylsulfamide. N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-N-methylsulfamide.

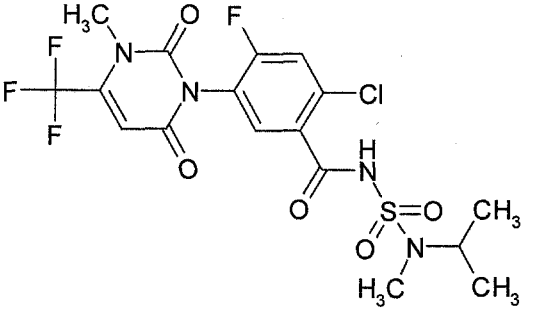
CAS Name: 2-Chloro-5-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-4-fluoro-N-[[methyl(1-methylethyl)amino]sulfonyl]benzamide.

CAS Number: 372137-35-4.

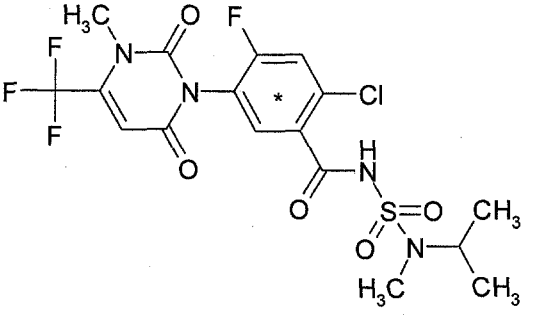
SMILES String: N1(C)C(C(F)(F)F)=CC(=O)N(C2=CC(C(=O)NS(=O)(=O)N(C)C(C)C)=C(Cl)C=C2F)C1=O (EPI Suite v3.12 SMILES string from ISIS .MOL).

Empirical formula: $C_{17}H_{17}ClF_4N_4O_5S$ **Molecular formula:** $C_{17}H_{17}ClF_4N_4O_5S$

Unlabeled



[Phenyl-U-^{14}C]Saflufenacil



* = Location of the radiolabel.

Identified Compounds

Saflufenacil [BAS 800 H, CL No. 433379, 4054449, AC 433,379]

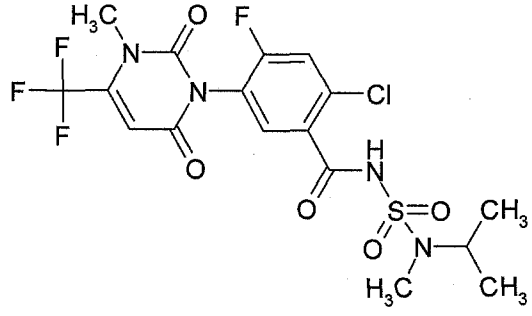
IUPAC Name: N'-{2-Chloro-4-fluoro-5-[1,2,3,6-tetrahydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)pyrimidin-1-yl]benzoyl}-N-isopropyl-N-methylsulfamide. N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-N-methylsulfamide.

CAS Name: 2-Chloro-5-[3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl]-4-fluoro-N-[[methyl(1-methylethyl)amino]sulfonyl]benzamide.

CAS Number: 372137-35-4.

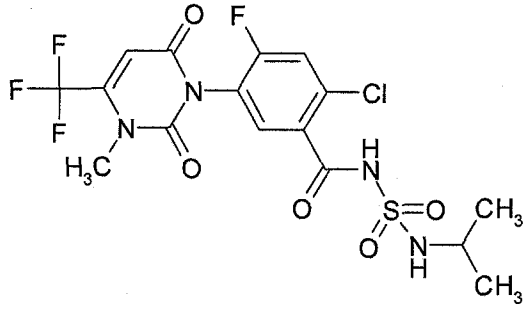
SMILES String: N1(C)C(C(F)(F)F)=CC(=O)N(C2=CC(C(=O)NS(=O)(=O)N(C)C(C)C)=C(Cl)C=C2F)C1=O (EPI Suite v3.12 SMILES string from ISIS .MOL).

Empirical formula: $C_{17}H_{17}ClF_4N_4O_5S$ **Molecular formula:** $C_{17}H_{17}ClF_4N_4O_5S$



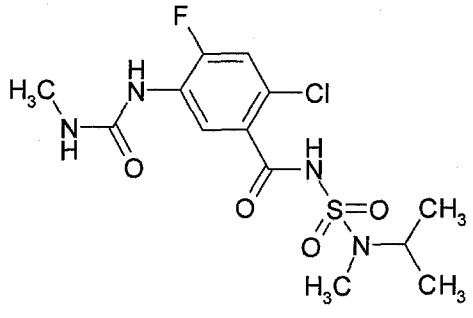
M800H01 [4118561]

IUPAC Name: N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)benzoyl]-N'-isopropylsulfamide.
CAS Name: Not reported.
CAS Number: Not reported.



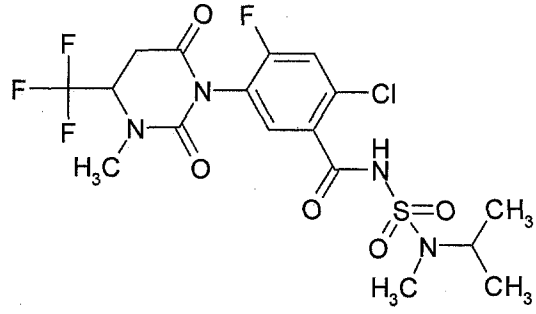
M800H07 [4775453]

IUPAC Name: N-{4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]phenyl}-N'-methylurea.
CAS Name: Not reported.
CAS Number: Not reported.



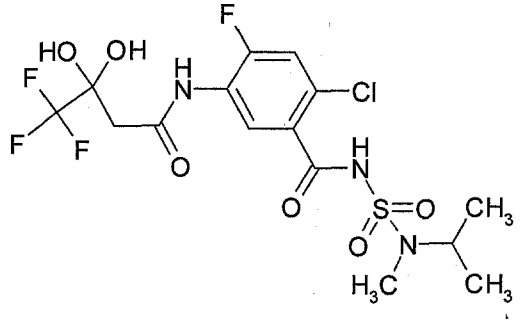
M800H08 [4773881]

IUPAC Name: N'-[2-Chloro-4-fluoro-5-(3-methyl-2,6-dioxo-4-(trifluoromethyl)tetrahydro-1(2H)-pyrimidinyl)benzoyl]-N-isopropyl-N-methylsulfamide.
CAS Name: Not reported.
CAS Number: Not reported.



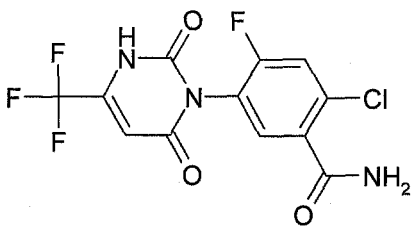
M800H15 [M800H15–ketohydrate, "Ketohydrate", 5264357]

IUPAC Name: N-{4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]phenyl}-4-4-4-trifluoro-3,3-dihydroxybutanamide.
CAS Name: Not reported.
CAS Number: Not reported.



Product 3

IUPAC Name: 2-Chloro-5-[2,6-dioxo-4-(trifluoromethyl)-3,6-dihydropyrimidin-1(2H)-yl]-4-fluorobenzamide (ISIS/Draw with ACD/Name add-in).
CAS Name: Not reported.
CAS Number: Not reported.



Carbon Dioxide

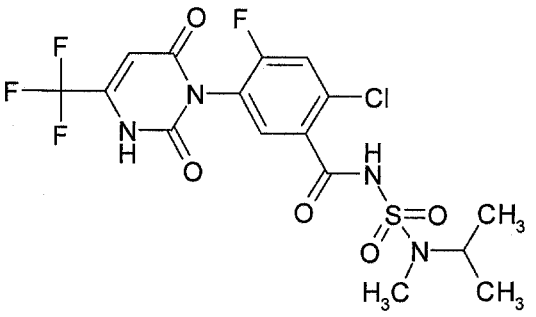
IUPAC Name: Carbon dioxide.
CAS Name: Carbon dioxide.
CAS Number: 124-38-9.

O=C=O

Unidentified Reference Compounds

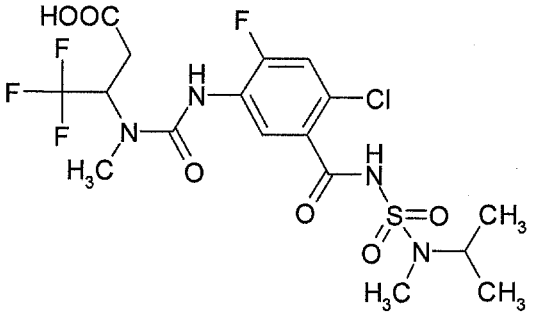
M800H02 [4118416]

IUPAC Name: N'-[2-Chloro-5-(2,6-dioxo-4-(trifluoromethyl)-3,6-dihydropyrimidin-1(2H)-yl)-4-fluorobenzoyl]-N-isopropyl-N-methylsulfamide.
N'-[2-Chloro-5-(2,6-dioxo-4-(trifluoromethyl)-3,6-dihydro-1(2H)-pyrimidinyl)-4-fluorobenzoyl]-N-isopropyl-N-methylsulfamide.
CAS Name: Not reported.
CAS Number: Not reported.



M800H22 [5216337]

IUPAC Name: 3-[({4-Chloro-2-fluoro-5-[({[isopropyl(methyl)amino]sulfonyl}amino)carbonyl]anilino}carbonyl)(methyl)amino]-4,4,4-trifluorobutanoic acid.
CAS Name: Not reported.
CAS Number: Not reported.



Attachment 2: Excel Spreadsheets

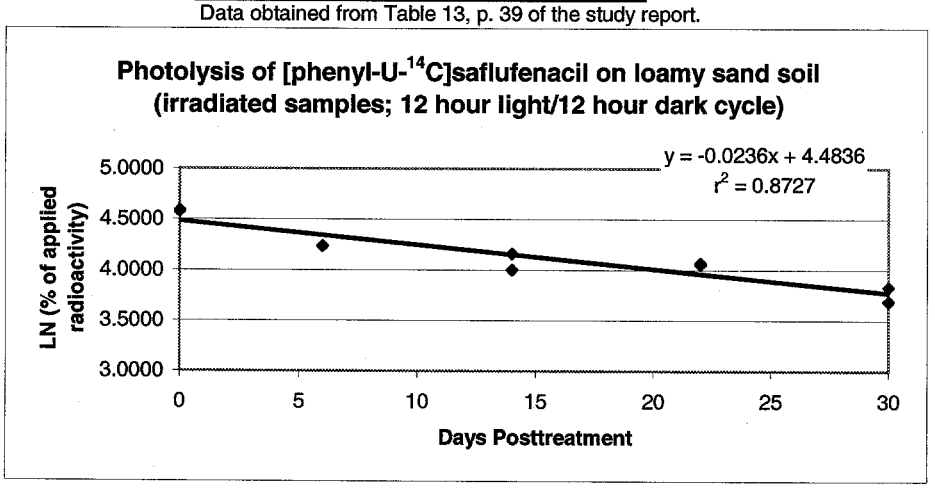
Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

12 hour light/12 hour dark cycle
Irradiated Samples

Days posttreatment	Saflufenacil	
	% applied	ln (% applied)
0	98.4	4.5890
0	97.1	4.5757
6	69.1	4.2356
6	69.0	4.2341
14	64.0	4.1589
14	54.7	4.0019
22	57.5	4.0518
22	58.4	4.0673
30	46.1	3.8308
30	40.0	3.6889

Half-life: **29.3 days**

Data obtained from Table 13, p. 39 of the study report.



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.934197833
R Square	0.872725591
Adjusted R Square	0.85681629
Standard Error	0.108575391
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.646679978	0.646679978	54.85631	7.57227E-05
Residual	8	0.094308925	0.011788616		
Total	9	0.740988903			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.483632513	0.057350579	78.17937697	7.99E-13	4.351381841	4.615883	4.351381841	4.615883184
X Variable 1	-0.023627373	0.003190084	-7.406504729	7.57E-05	-0.03098372	-0.016271	-0.03098372	-0.016271026

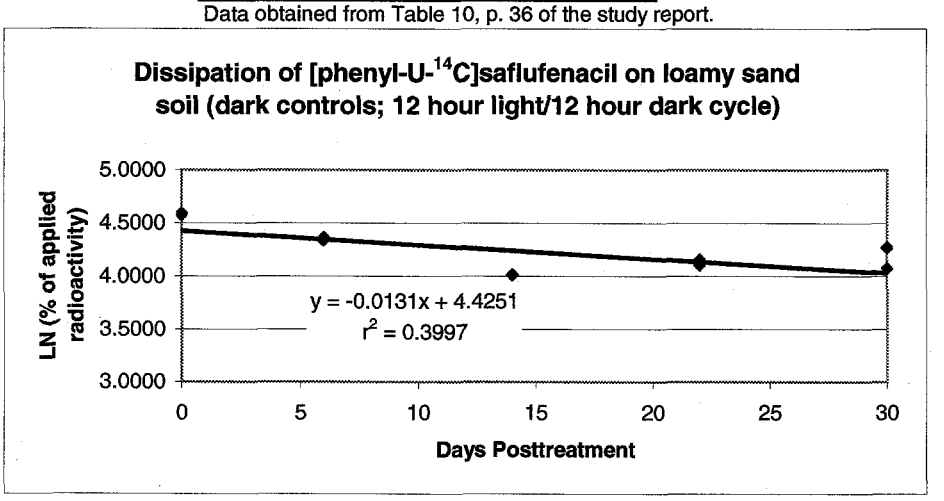
Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

12 hour light/12 hour dark cycle
Dark Controls

Days posttreatment	Saflufenacil	
	% applied	ln (% applied)
0	98.4	4.5890
0	97.1	4.5757
6	78.6	4.3644
6	76.4	4.3360
14	47.9	3.8691
14	55.5	4.0164
22	64.0	4.1589
22	60.8	4.1076
30	58.9	4.0758
30	71.5	4.2697

Half-life: **52.8 days**

Data obtained from Table 10, p. 36 of the study report.



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.632239086
R Square	0.399726261
Adjusted R Square	0.324692044
Standard Error	0.193421121
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.199301751	0.199301751	5.327253	0.049837904
Residual	8	0.299293839	0.03741173		
Total	9	0.49859559			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.425145869	0.102166919	43.31290319	8.9E-11	4.189548532	4.660743	4.189548532	4.660743207
X Variable 1	-0.013116751	0.00568296	-2.308084276	0.049838	-0.026221681	-1.2E-05	-0.026221681	-1.18214E-05

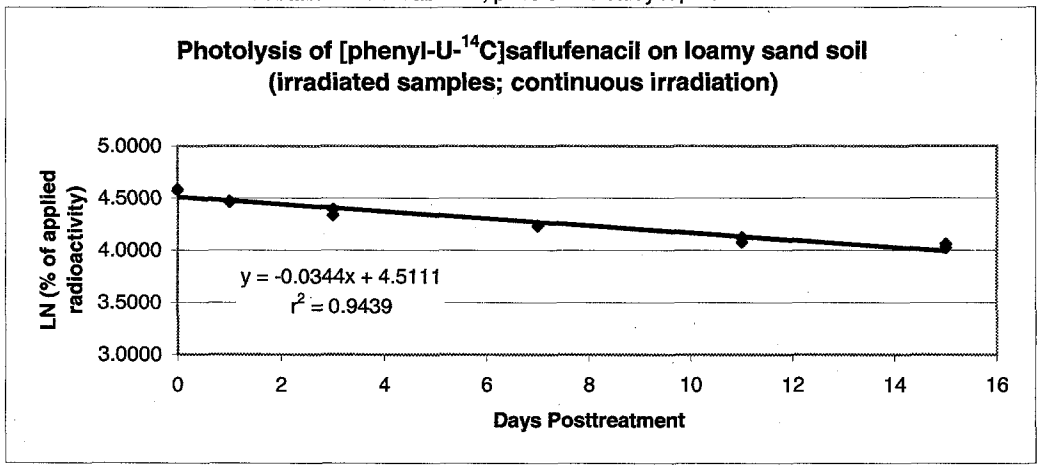
Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Phenyl label
Continuous irradiation
Irradiated Samples

Days posttreatment	Saflufenacil	
	% applied	ln (% applied)
0	96.88	4.5735
0	97.80	4.5829
1	86.99	4.4658
1	87.60	4.4728
3	76.60	4.3386
3	81.12	4.3959
7	69.06	4.2350
7	68.93	4.2331
11	59.14	4.0799
11	61.64	4.1213
15	58.03	4.0610
15	56.01	4.0255

Half-life: **20.1 days**

Data obtained from Table 14, p. 40 of the study report.



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.971532913
R Square	0.9438762
Adjusted R Square	0.93826382
Standard Error	0.049941254
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.419456429	0.419456429	168.1775	1.40362E-07
Residual	10	0.024941289	0.002494129		
Total	11	0.444397718			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.511144673	0.021817966	206.7628403	1.72E-19	4.462531215	4.559758	4.462531215	4.559758131
X Variable 1	-0.034438669	0.002655598	-12.96832793	1.4E-07	-0.040355711	-0.02852	-0.040355711	-0.028521628

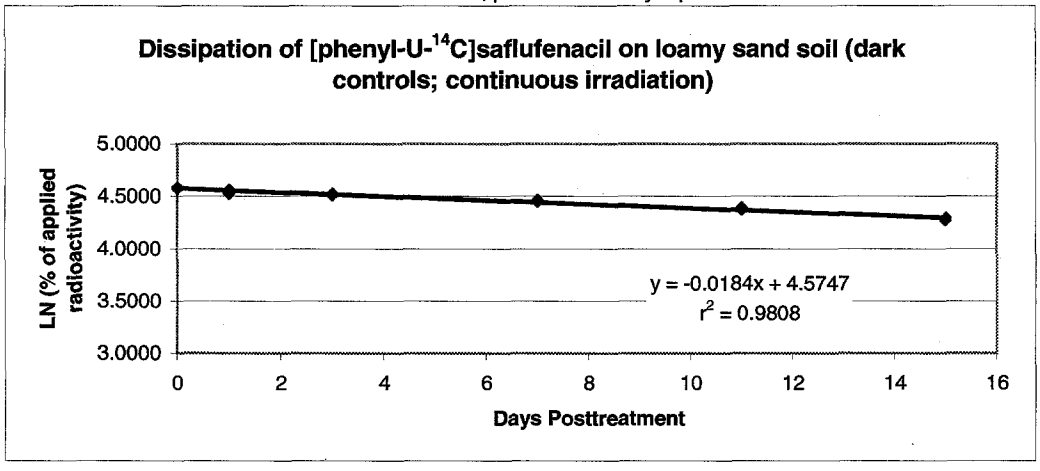
Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Phenyl label
Continuous irradiation
Dark Controls

Days posttreatment	Saflufenacil	
	% applied	ln (% applied)
0	96.88	4.5735
0	97.80	4.5829
1	95.45	4.5586
1	92.55	4.5277
3	91.19	4.5129
3	92.02	4.5220
7	86.69	4.4623
7	86.04	4.4548
11	79.55	4.3764
11	80.91	4.3933
15	71.86	4.2747
15	73.25	4.2939

Half-life: **37.6 days**

Data obtained from Table 11, p. 37 of the study report.



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9903655
R Square	0.980823825
Adjusted R Square	0.978906207
Standard Error	0.01531578
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.119979554	0.119979554	511.4804	6.43295E-10
Residual	10	0.002345731	0.000234573		
Total	11	0.122325285			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.57467906	0.006691045	683.7017533	1.1E-24	4.559770483	4.589588	4.559770483	4.589587636
X Variable 1	-0.018418597	0.000814408	-22.61593282	6.43E-10	-0.020233212	-0.0166	-0.020233212	-0.016603983

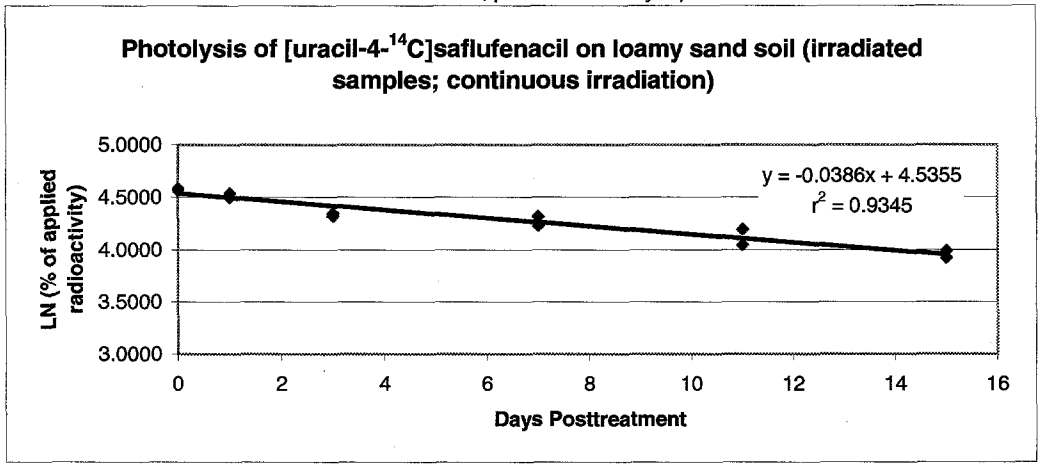
Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Uracil label
Continuous irradiation
Irradiated Samples

Days posttreatment	Saflufenacil	
	% applied	ln (% applied)
0	97.39	4.5787
0	96.43	4.5688
1	93.49	4.5379
1	90.12	4.5011
3	77.15	4.3458
3	75.34	4.3220
7	68.97	4.2337
7	75.08	4.3186
11	66.48	4.1969
11	57.28	4.0480
15	50.64	3.9247
15	54.06	3.9901

Half-life: **17.9 days**

Data obtained from Table 15, p. 41 of the study report.



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.966701581
R Square	0.934511946
Adjusted R Square	0.92796314
Standard Error	0.060840445
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.528211115	0.528211115	142.6996	3.04868E-07
Residual	10	0.037015598	0.00370156		
Total	11	0.565226712			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.535502773	0.026579524	170.6389746	1.17E-18	4.476279903	4.594726	4.476279903	4.594725644
X Variable 1	-0.038646192	0.003235157	-11.945694	3.05E-07	-0.04585457	-0.03144	-0.04585457	-0.031437813

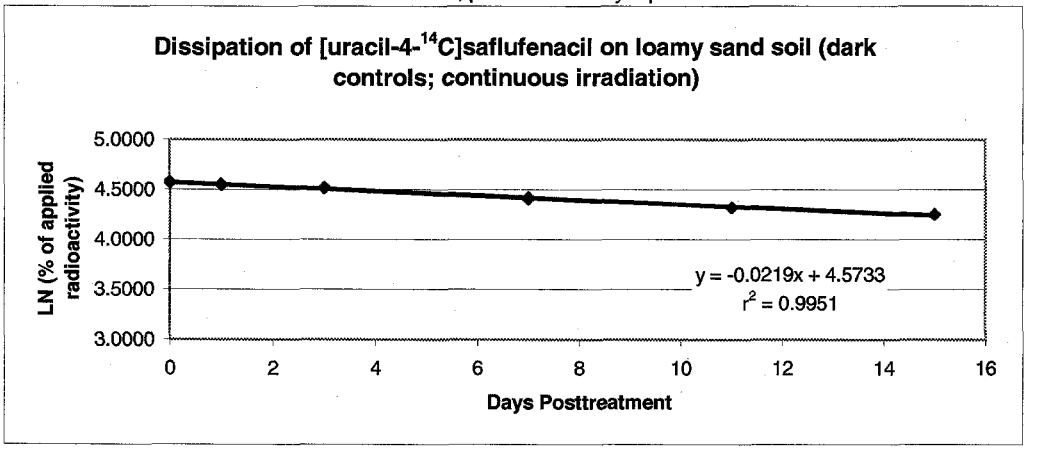
Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Uracil label
Continuous irradiation
Dark Controls

Days posttreatment	Saflufenacil	
	% applied	ln (% applied)
0	97.39	4.5787
0	96.43	4.5688
1	95.18	4.5558
1	93.98	4.5431
3	91.08	4.5117
3	91.93	4.5210
7	83.21	4.4214
7	82.07	4.4076
11	75.39	4.3227
11	75.36	4.3223
15	70.44	4.2548
15	70.21	4.2515

Half-life: **31.7 days**

Data obtained from Table 12, p. 38 of the study report.



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.997554219
R Square	0.995114419
Adjusted R Square	0.994625861
Standard Error	0.009124553
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.169582084	0.169582084	2036.839515	6.86385E-13
Residual	10	0.000832575	8.32575E-05		
Total	11	0.170414659			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.573309228	0.003986267	1147.266116	6.22937E-27	4.564427271	4.582191	4.564427271	4.582191185
X Variable 1	-0.021897419	0.000485193	-45.13135844	6.86385E-13	-0.022978496	-0.020816	-0.022978496	-0.020816341

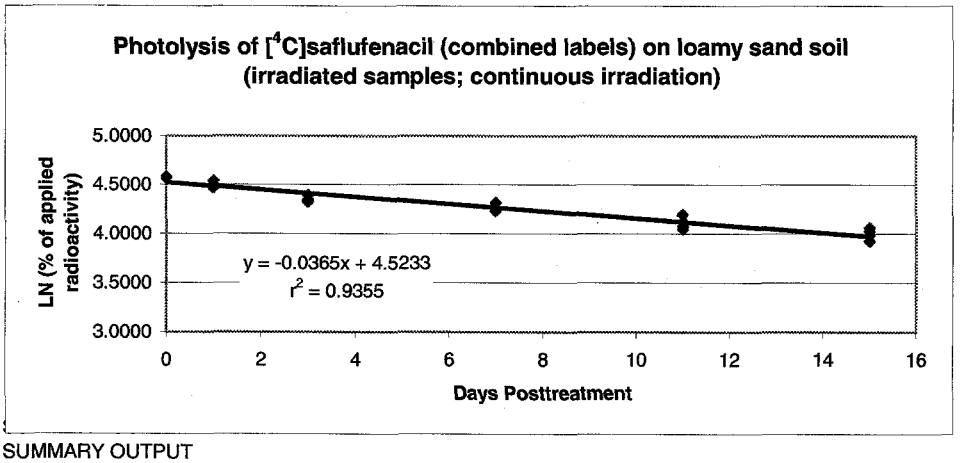
Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Combined labels
Continuous irradiation
Irradiated Samples

Days posttreatment	Saflufenacil % applied	Saflufenacil ln (% applied)
0	96.88	4.5735
0	97.80	4.5829
1	86.99	4.4658
1	87.60	4.4728
3	76.60	4.3386
3	81.12	4.3959
7	69.06	4.2350
7	68.93	4.2331
11	59.14	4.0799
11	61.64	4.1213
15	58.03	4.0610
15	56.01	4.0255
0	97.39	4.5787
0	96.43	4.5688
1	93.49	4.5379
1	90.12	4.5011
3	77.15	4.3458
3	75.34	4.3220
7	68.97	4.2337
7	75.08	4.3186
11	66.48	4.1969
11	57.28	4.0480
15	50.64	3.9247
15	54.06	3.9901

Half-life: **19.0 days**

Data obtained from Tables 14-15, pp. 40-41 of the study report.



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.967222323
R Square	0.935519023
Adjusted R Square	0.93258807
Standard Error	0.05439859
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.944537021	0.944537021	319.1859	1.38924E-14
Residual	22	0.065102546	0.002959207		
Total	23	1.009639566			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.523323723	0.016804573	269.1721983	3.39E-40	4.488473135	4.558174	4.488473135	4.558174311
X Variable 1	-0.036542431	0.002045387	-17.86577447	1.39E-14	-0.040784309	-0.0323	-0.040784309	-0.032300552

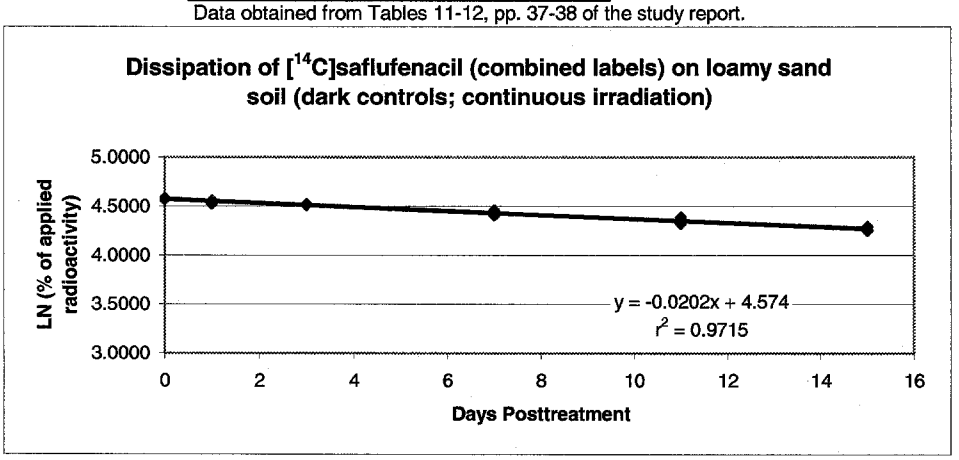
Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Combined labels
Continuous irradiation
Dark Controls

Days posttreatment	Saflufenacil	
	% applied	ln (% applied)
0	96.88	4.5735
0	97.80	4.5829
1	95.45	4.5586
1	92.55	4.5277
3	91.19	4.5129
3	92.02	4.5220
7	86.69	4.4623
7	86.04	4.4548
11	79.55	4.3764
11	80.91	4.3933
15	71.86	4.2747
15	73.25	4.2939
0	97.39	4.5787
0	96.43	4.5688
1	95.18	4.5558
1	93.98	4.5431
3	91.08	4.5117
3	91.93	4.5210
7	83.21	4.4214
7	82.07	4.4076
11	75.39	4.3227
11	75.36	4.3223
15	70.44	4.2548
15	70.21	4.2515

Half-life: **34.4 days**

Data obtained from Tables 11-12, pp. 37-38 of the study report.



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.985627387
R Square	0.971461346
Adjusted R Square	0.970164134
Standard Error	0.019590807
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.287421566	0.287421566	748.8843	1.74309E-18
Residual	22	0.008443593	0.0003838		
Total	23	0.29586516			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.573994144	0.006051906	755.794042	4.65E-50	4.561443246	4.586545	4.561443246	4.586545041
X Variable 1	-0.020158008	0.000736614	-27.36575029	1.74E-18	-0.021685655	-0.01863	-0.021685655	-0.018630361

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

12 hour light/12 hour dark cycle
Dark Controls

Data obtained from Table 4, p. 30; Table 10, p. 36 of the study report.

Days posttreatment	Total recovery		
	% applied	Mean	SD
0	100.0	99.2	1.1
0	98.4		
6	96.5	95.2	1.8
6	93.9		
14	96.3	95.3	1.4
14	94.3		
22	97.8	97.5	0.5
22	97.1		
30	97.6	97.0	0.8
30	96.4		
Average	96.8		
SD	1.8		

Days posttreatment	Extractable Residues		
	% applied	Mean	SD
0	98.4	97.8	0.9
0	97.1		
6	94.7	93.3	2.0
6	91.9		
14	92.0	90.9	1.6
14	89.8		
22	89.7	90.2	0.7
22	90.7		
30	88.7	88.9	0.2
30	89.0		

Days posttreatment	Non-extractable Residues		
	% applied	Mean	SD
0	1.6	1.5	0.1
0	1.4		
6	1.8	1.9	0.1
6	1.9		
14	4.3	4.4	0.1
14	4.5		
22	8.0	7.2	1.2
22	6.3		
30	8.9	8.1	1.1
30	7.3		

Days posttreatment	Parent		
	% applied	Mean	SD
0	98.4	97.8	0.9
0	97.1		
6	78.6	77.5	1.6
6	76.4		
14	47.9	51.7	5.4
14	55.5		
22	64.0	62.4	2.3
22	60.8		
30	58.9	65.2	8.9
30	71.5		

Days posttreatment	M800H07		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	7.0	6.8	0.3
6	6.6		
14	19.4	17.3	3.0
14	15.1		
22	5.2	3.5	2.5
22	1.7		
30	2.3	2.1	0.4
30	1.8		

Days posttreatment	M800H15		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	0.5	0.5	0.1
6	0.4		
14	5.4	4.7	1.0
14	4.0		
22	1.1	1.4	0.4
22	1.7		
30	2.0	1.7	0.4
30	1.4		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

12 hour light/12 hour dark cycle
Dark Controls

Data obtained from Table 4, p. 30; Table 10, p. 36 of the study report.

Days posttreatment	M800H08		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	3.0	3.0	0.0
6	3.0		
14	2.7	1.9	1.2
14	1.0		
22	13.3	16.1	3.9
22	18.8		
30	18.2	14.2	5.7
30	10.2		

Days posttreatment	M800H01		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	2.2	2.1	0.1
6	2.0		
14	5.4	4.3	1.6
14	3.2		
22		#DIV/0!	#####
22			
30		#DIV/0!	#####
30			

Days posttreatment	Prod. At 13.4 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	0.1	0.2	0.1
6	0.3		
14	1.7	1.4	0.5
14	1.0		
22	0.3	0.3	0.1
22	0.2		
30	0.1	0.2	0.1
30	0.2		

Days posttreatment	Prod. At 13 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	0.1	0.1	0.0
6	0.1		
14	2.1	1.2	1.3
14	0.3		
22	0.2	0.2	#####
22			
30		#DIV/0!	#####
30			

Days posttreatment	Product 8 at 17.4 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	1.1	1.1	0.1
6	1.0		
14	1.5	3.5	2.8
14	5.5		
22	3.3	3.8	0.6
22	4.2		
30	4.7	3.8	1.3
30	2.8		

Days posttreatment	Prod. 6 at 16.4 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	0.7	0.7	0.1
6	0.6		
14	4.2	3.5	1.1
14	2.7		
22	1.8	2.1	0.4
22	2.3		
30	2.3	1.7	0.9
30	1.0		

Days posttreatment	Products 6 and 8		
	% applied	Mean	SD
0	0.0	0.0	0.0
0	0.0		
6	1.8	1.7	0.1
6	1.6		
14	5.7	7.0	1.8
14	8.2		
22	5.1	5.8	1.0
22	6.5		
30	7.0	5.4	2.3
30	3.8		

Days posttreatment	Other Unknowns		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	1.3	1.4	0.1
6	1.5		
14	1.7	1.6	0.2
14	1.4		
22	0.6	0.9	0.4
22	1.1		
30	0.1	0.1	0.0
30	0.1		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

12 hour light/12 hour dark cycle
Irradiated samples

Data obtained from Table 7, p. 33; Table 13, p. 39 of the study report.

Days posttreatment	Total recovery		
	% applied	Mean	SD
0	100.0	99.2	1.1
0	98.4		
6	96.4	96.1	0.5
6	95.7		
14	96.1	96.0	0.2
14	95.8		
22	95.2	95.0	0.3
22	94.8		
30	94.3	93.2	1.6
30	92.0		
Average	95.9		
SD	2.2		

Days posttreatment	Extractable Residues		
	% applied	Mean	SD
0	98.4	97.8	0.9
0	97.1		
6	85.2	84.7	0.7
6	84.2		
14	83.3	82.7	0.8
14	82.1		
22	79.6	80.1	0.6
22	80.5		
30	76.4	75.3	1.6
30	74.2		

Days posttreatment	Non-extractable Residues		
	% applied	Mean	SD
0	1.6	1.5	0.1
0	1.4		
6	11.0	11.2	0.2
6	11.3		
14	12.4	12.9	0.6
14	13.3		
22	15.1	14.4	1.0
22	13.7		
30	17.1	17.1	0.1
30	17.0		

Days posttreatment	NaOH Volatile Trap		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	0.2	0.2	#####
6			
14	0.4	0.4	#####
14			
22	0.5	0.5	#####
22			
30	0.8	0.8	#####
30			

Days posttreatment	Parent		
	% applied	Mean	SD
0	98.4	97.8	0.9
0	97.1		
6	69.1	69.1	0.1
6	69.0		
14	64.0	59.4	6.6
14	54.7		
22	57.5	58.0	0.6
22	58.4		
30	46.1	43.1	4.3
30	40.0		

Days posttreatment	M800H07		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6		#DIV/0!	#####
6			
14	1.9	2.2	0.4
14	2.4		
22	1.9	1.8	0.1
22	1.7		
30	2.6	3.0	0.5
30	3.3		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

12 hour light/12 hour dark cycle
Irradiated samples

Data obtained from Table 7, p. 33; Table 13, p. 39 of the study report.

Days posttreatment	M800H15		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	3.8	4.2	0.6
6	4.6		
14	5.9	6.8	1.3
14	7.7		
22	6.5	6.9	0.5
22	7.2		
30	6.4	8.0	2.3
30	9.6		

Days posttreatment	M800H01		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	0.4	0.3	0.1
6	0.2		
14		#DIV/0!	#####
14			
22		#DIV/0!	#####
22			
30	2.7	1.6	1.6
30	0.5		

Days posttreatment	M800H08		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	1.7	1.7	0.1
6	1.6		
14	1.0	1.8	1.1
14	2.6		
22	2.0	1.8	0.3
22	1.6		
30		1.7	#####
30	1.7		

Days posttreatment	Polar Product		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6		#DIV/0!	#####
6			
14		0.3	#####
14	0.3		
22		#DIV/0!	#####
22			
30		#DIV/0!	#####
30			

Days posttreatment	Prod. At 13 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	2.5	2.4	0.1
6	2.3		
14		#DIV/0!	#####
14			
22		#DIV/0!	#####
22			
30		#DIV/0!	#####
30			

Days posttreatment	Prod. At 13.4 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	1.9	1.9	0.0
6	1.9		
14	4.6	5.4	1.1
14	6.2		
22	4.0	4.8	1.1
22	5.5		
30	6.7	8.0	1.8
30	9.2		

Days posttreatment	Prod. 6 at 16.4 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	0.3	0.3	0.0
6	0.3		
14	0.4	0.5	0.1
14	0.6		
22	0.3	0.4	0.1
22	0.4		
30		#DIV/0!	#####
30			

Days posttreatment	Product 8 at 17.4 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	4.9	4.5	0.6
6	4.0		
14	5.5	5.4	0.1
14	5.3		
22	6.6	6.2	0.6
22	5.7		
30	2.5	4.0	2.1
30	5.5		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

12 hour light/12 hour dark cycle
Irradiated samples

Data obtained from Table 7, p. 33; Table 13, p. 39 of the study report.

Days posttreatment	Prod. 9 at 18.2 min		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6	0.6	0.4	0.3
6	0.2		
14		#DIV/0!	#####
14			
22		#DIV/0!	#####
22			
30		0.6	#####
30	0.6		

Days posttreatment	Other Unknowns		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
6		#DIV/0!	#####
6			
14		2.3	#####
14	2.3		
22	0.9	0.5	0.6
22	0.1		
30	9.4	6.6	4.0
30	3.8		

Days posttreatment	Products 6, 8 and 9		
	% applied	Mean	SD
0	0.0	0.0	0.0
0	0.0		
6	5.8	5.2	0.9
6	4.5		
14	5.9	5.9	0.0
14	5.9		
22	6.9	6.5	0.6
22	6.1		
30	2.5	4.3	2.5
30	6.1		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Phenyl label
Dark Controls
Data obtained from Table 5, p. 31; Table 11, p. 37 of the study report.

Days	Total recovery		
posttreatment	% applied	Mean	SD
0	98.79	99.40	0.86
0	100.00		
1	98.83	97.36	2.09
1	95.88		
3	96.91	97.57	0.93
3	98.23		
7	97.90	98.19	0.41
7	98.48		
11	98.42	98.51	0.13
11	98.60		
15	97.84	97.60	0.34
15	97.36		
Average	98.10		
SD	1.05		

Days	Extractable Residues		
posttreatment	% applied	Mean	SD
0	97.37	97.92	0.78
0	98.47		
1	97.26	95.65	2.28
1	94.03		
3	94.46	95.02	0.78
3	95.57		
7	95.39	95.57	0.25
7	95.75		
11	95.25	95.47	0.31
11	95.69		
15	93.61	93.19	0.59
15	92.77		

Days	Non-extractable Residues		
posttreatment	% applied	Mean	SD
0	1.42	1.48	0.08
0	1.53		
1	1.57	1.71	0.20
1	1.85		
3	2.45	2.56	0.15
3	2.66		
7	2.50	2.61	0.16
7	2.72		
11	3.15	3.02	0.18
11	2.89		
15	4.19	4.37	0.25
15	4.55		

Days	NaOH Volatile Trap		
posttreatment	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7	0.01	0.01	#####
7			
11	0.02	0.02	#####
11			
15	0.03	0.03	#####
15			

Days	Parent		
posttreatment	% applied	Mean	SD
0	96.88	97.34	0.65
0	97.80		
1	95.45	94.00	2.05
1	92.55		
3	91.19	91.61	0.59
3	92.02		
7	86.69	86.37	0.46
7	86.04		
11	79.55	80.23	0.96
11	80.91		
15	71.86	72.56	0.98
15	73.25		

Days	M800H08 (Product 10)		
posttreatment	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.65	0.60	0.08
1	0.54		
3	1.88	1.87	0.01
3	1.86		
7	5.47	5.80	0.46
7	6.12		
11	9.71	9.70	0.01
11	9.69		
15	14.12	13.35	1.10
15	12.57		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Phenyl label
Dark Controls
Data obtained from Table 5, p. 31; Table 11, p. 37 of the study report.

Days posttreatment	Product 3		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3	0.15	0.14	0.02
3	0.12		
7		#DIV/0!	#####
7			
11	0.16	0.15	0.02
11	0.13		
15	0.04	0.09	0.06
15	0.13		

Days posttreatment	Product 4		
	% applied	Mean	SD
0	0.49	0.46	0.04
0	0.43		
1	0.53	0.50	0.05
1	0.46		
3	0.45	0.46	0.01
3	0.47		
7	0.42	0.43	0.01
7	0.44		
11	0.42	0.38	0.06
11	0.33		
15	0.41	0.47	0.08
15	0.52		

Days posttreatment	Product 5		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3	0.06	0.05	0.01
3	0.04		
7	0.27	0.28	0.01
7	0.28		
11	0.42	0.41	0.01
11	0.40		
15	0.51	0.53	0.03
15	0.55		

Days posttreatment	Product 6		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.24	0.18	0.09
1	0.11		
3	0.14	0.18	0.06
3	0.22		
7	0.48	0.49	0.01
7	0.50		
11	0.89	0.78	0.16
11	0.66		
15	1.30	1.28	0.04
15	1.25		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Phenyl label
Dark Controls
Data obtained from Table 5, p. 31; Table 11, p. 37 of the study report.

Days posttreatment	Product 7		
	% applied	Mean	SD
0		0.23	#####
0	0.23		
1	0.13	0.08	0.07
1	0.03		
3	0.16	0.20	0.06
3	0.24		
7	0.54	0.65	0.15
7	0.75		
11	1.33	1.15	0.25
11	0.97		
15	1.74	1.64	0.14
15	1.54		

Days posttreatment	Product 8		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.27	0.31	0.05
1	0.34		
3	0.43	0.52	0.12
3	0.60		
7	1.35	1.42	0.09
7	1.48		
11	2.39	2.33	0.09
11	2.26		
15	3.63	3.30	0.47
15	2.97		

Days posttreatment	Others		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7	0.16	0.16	0.01
7	0.15		
11	0.38	0.36	0.03
11	0.34		
15		#DIV/0!	#####
15			

Days posttreatment	Products 1a, 2, 5, 6, 9		
	% applied	Mean	SD
0	0.00	0.00	0.00
0	0.00		
1	0.24	0.18	0.09
1	0.11		
3	0.20	0.23	0.04
3	0.26		
7	0.75	0.77	0.02
7	0.78		
11	1.31	1.19	0.18
11	1.06		
15	1.81	1.81	0.01
15	1.80		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Phenyl label
Irradiated samples
Data obtained from Table 8, p. 34; Table 14, p. 40 of the study report.

Days posttreatment	Total recovery		
	% applied	Mean	SD
0	98.79	99.40	0.86
0	100.00		
1	96.97	96.69	0.40
1	96.40		
3	96.95	96.35	0.85
3	95.75		
7	95.34	95.55	0.29
7	95.75		
11	95.80	95.98	0.25
11	96.15		
15	96.38	96.12	0.37
15	95.85		
Average	96.68		
SD	1.38		

Days posttreatment	Extractable Residues		
	% applied	Mean	SD
0	97.37	97.92	0.78
0	98.47		
1	92.72	92.72	0.00
1	92.72		
3	89.50	90.17	0.94
3	90.83		
7	86.09	86.51	0.59
7	86.92		
11	84.98	85.69	1.00
11	86.40		
15	85.25	84.82	0.61
15	84.39		

Days posttreatment	Non-extractable Residues		
	% applied	Mean	SD
0	1.42	1.48	0.08
0	1.53		
1	4.22	3.93	0.41
1	3.64		
3	7.35	6.08	1.80
3	4.80		
7	8.98	8.77	0.30
7	8.56		
11	10.36	9.82	0.76
11	9.28		
15	10.43	10.60	0.23
15	10.76		

Days posttreatment	NaOH Volatile Trap		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.03	0.03	#####
1			
3	0.11	0.11	#####
3			
7	0.27	0.27	#####
7			
11	0.45	0.45	#####
11			
15	0.69	0.69	#####
15			

Days posttreatment	Parent		
	% applied	Mean	SD
0	96.88	97.34	0.65
0	97.80		
1	86.99	87.30	0.43
1	87.60		
3	76.60	78.86	3.20
3	81.12		
7	69.06	69.00	0.09
7	68.93		
11	59.14	60.39	1.77
11	61.64		
15	58.03	57.02	1.43
15	56.01		

Days posttreatment	M800H08 (Product 10)		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.16	0.12	0.06
1	0.07		
3		#DIV/0!	#####
3			
7		#DIV/0!	#####
7			
11		0.10	#####
11	0.10		
15	1.18	1.19	0.01
15	1.19		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Phenyl label
Irradiated samples
Data obtained from Table 8, p. 34; Table 14, p. 40 of the study report.

Days posttreatment	Product 1a % applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7	0.25	0.27	0.03
7	0.29		
11	0.29	0.33	0.06
11	0.37		
15	0.31	0.37	0.08
15	0.42		

Days posttreatment	Product 1b % applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7		#DIV/0!	#####
7			
11		#DIV/0!	#####
11			
15		#DIV/0!	#####
15			

Days posttreatment	Product 2 % applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7		#DIV/0!	#####
7			
11	0.82	0.78	0.06
11	0.74		
15	1.15	1.18	0.04
15	1.20		

Days posttreatment	Product 3 % applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.30	0.34	0.06
1	0.38		
3	0.79	0.68	0.16
3	0.57		
7	1.40	1.42	0.02
7	1.43		
11	2.16	2.20	0.06
11	2.24		
15	2.95	2.85	0.15
15	2.74		

Days posttreatment	Product 4 % applied	Mean	SD
0	0.49	0.46	0.04
0	0.43		
1	0.64	0.62	0.03
1	0.60		
3	1.14	1.11	0.05
3	1.07		
7	2.15	2.06	0.13
7	1.97		
11	3.20	3.13	0.11
11	3.05		
15	2.44	2.45	0.01
15	2.46		

Days posttreatment	Product 5 % applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.33	0.29	0.06
1	0.24		
3	0.79	0.60	0.28
3	0.40		
7	1.13	1.12	0.02
7	1.10		
11	2.14	2.02	0.17
11	1.90		
15	1.84	2.08	0.33
15	2.31		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Phenyl label
Irradiated samples
Data obtained from Table 8, p. 34; Table 14, p. 40 of the study report.

Days posttreatment	Product 6		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.60	0.60	0.00
1	0.60		
3	1.41	1.10	0.45
3	0.78		
7	1.64	1.64	0.01
7	1.63		
11	2.53	2.37	0.23
11	2.21		
15	2.21	2.30	0.13
15	2.39		

Days posttreatment	Product 7		
	% applied	Mean	SD
0		0.23	#####
0	0.23		
1	0.12	0.12	0.01
1	0.11		
3	0.21	0.19	0.04
3	0.16		
7	0.21	0.28	0.09
7	0.34		
11	0.29	0.42	0.18
11	0.54		
15	0.94	0.89	0.07
15	0.84		

Days posttreatment	Product 8		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	2.27	2.17	0.15
1	2.06		
3	7.80	7.00	1.14
3	6.19		
7	9.39	9.81	0.59
7	10.22		
11	12.78	12.50	0.40
11	12.21		
15	11.60	11.94	0.47
15	12.27		

Days posttreatment	Product 9		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	1.12	1.09	0.05
1	1.05		
3	0.37	0.32	0.07
3	0.27		
7	0.41	0.48	0.10
7	0.55		
11	0.80	0.67	0.19
11	0.53		
15	0.28	0.30	0.02
15	0.31		

Days posttreatment	Others		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.17	0.09	0.11
1	0.01		
3	0.39	0.34	0.08
3	0.28		
7	0.46	0.45	0.02
7	0.43		
11	0.83	0.85	0.03
11	0.87		
15	2.31	2.29	0.03
15	2.27		

Days posttreatment	Products 1a, 2, 5, 6, 9		
	% applied	Mean	SD
0	0.00	0.00	0.00
0	0.00		
1	2.05	1.97	0.11
1	1.89		
3	2.57	2.01	0.79
3	1.45		
7	3.43	3.50	0.10
7	3.57		
11	6.58	6.17	0.59
11	5.75		
15	5.79	6.21	0.59
15	6.63		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Uracil label
Dark Controls
Data obtained from Table 6, p. 32; Table 12, p. 38 of the study report.

Days posttreatment	Total recovery		
	% applied	Mean	SD
0	100.00	99.48	0.74
0	98.95		
1	98.68	98.30	0.54
1	97.92		
3	99.35	99.98	0.89
3	100.61		
7	97.81	98.17	0.51
7	98.53		
11	97.97	98.17	0.28
11	98.36		
15	99.68	98.94	1.05
15	98.19		
Average	98.84		
SD	0.90		

Days posttreatment	Extractable Residues		
	% applied	Mean	SD
0	98.49	97.98	0.73
0	97.46		
1	97.42	97.07	0.50
1	96.71		
3	97.40	98.02	0.88
3	98.64		
7	95.36	95.63	0.38
7	95.90		
11	94.69	95.00	0.44
11	95.31		
15	95.85	95.06	1.12
15	94.27		

Days posttreatment	Non-extractable Residues		
	% applied	Mean	SD
0	1.51	1.50	0.01
0	1.49		
1	1.26	1.24	0.04
1	1.21		
3	1.93	1.94	0.01
3	1.95		
7	2.39	2.49	0.13
7	2.58		
11	3.19	3.07	0.17
11	2.95		
15	3.70	3.74	0.06
15	3.78		

Days posttreatment	NaOH Volatile Trap		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3	0.01	0.01	#####
3			
7	0.04	0.04	#####
7			
11	0.06	0.06	#####
11			
15	0.09	0.09	#####
15			

Days posttreatment	Parent		
	% applied	Mean	SD
0	97.39	96.91	0.68
0	96.43		
1	95.18	94.58	0.85
1	93.98		
3	91.08	91.51	0.60
3	91.93		
7	83.21	82.64	0.81
7	82.07		
11	75.39	75.38	0.02
11	75.36		
15	70.44	70.33	0.16
15	70.21		

Days posttreatment	M800H08 (Product 10)		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.62	0.80	0.25
1	0.98		
3	3.01	3.24	0.32
3	3.46		
7	7.03	7.44	0.58
7	7.85		
11	12.00	11.86	0.20
11	11.72		
15	15.94	15.43	0.72
15	14.92		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Uracil label
Dark Controls
Data obtained from Table 6, p. 32; Table 12, p. 38 of the study report.

Days posttreatment	Product 1a		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7	0.18	0.21	0.04
7	0.24		
11	0.24	0.27	0.04
11	0.29		
15	0.43	0.40	0.04
15	0.37		

Days posttreatment	Product 1b		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7		#DIV/0!	#####
7			
11		#DIV/0!	#####
11			
15		0.05	#####
15	0.05		

Days posttreatment	Product 2		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7		#DIV/0!	#####
7			
11	0.26	0.24	0.03
11	0.22		
15		#DIV/0!	#####
15			

Days posttreatment	Product 3		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7	0.16	0.22	0.08
7	0.28		
11	0.56	0.60	0.05
11	0.63		
15	0.24	0.25	0.01
15	0.25		

Days posttreatment	Product 4		
	% applied	Mean	SD
0	0.63	0.62	0.02
0	0.60		
1	0.71	0.68	0.05
1	0.64		
3	0.74	0.67	0.10
3	0.60		
7	0.61	0.67	0.08
7	0.72		
11		0.28	#####
11	0.28		
15	0.58	0.56	0.04
15	0.53		

Days posttreatment	Product 5		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7		#DIV/0!	#####
7			
11		0.11	#####
11	0.11		
15	0.22	0.22	0.00
15	0.22		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Uracil label
Dark Controls
Data obtained from Table 6, p. 32; Table 12, p. 38 of the study report.

Days posttreatment	Product 6		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.14	0.19	0.07
1	0.24		
3	0.40	0.45	0.07
3	0.50		
7	0.61	0.67	0.08
7	0.73		
11	1.09	1.03	0.09
11	0.96		
15	1.17	1.13	0.06
15	1.09		

Days posttreatment	Product 7		
	% applied	Mean	SD
0	0.47	0.45	0.03
0	0.43		
1	0.20	0.23	0.04
1	0.25		
3	0.75	0.75	0.01
3	0.74		
7	1.40	1.42	0.02
7	1.43		
11	1.76	1.76	0.01
11	1.75		
15	2.28	2.17	0.16
15	2.05		

Days posttreatment	Product 8		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.56	0.59	0.04
1	0.61		
3	1.42	1.42	0.01
3	1.41		
7	2.17	2.38	0.29
7	2.58		
11	3.09	3.35	0.36
11	3.60		
15	4.19	4.20	0.01
15	4.21		

Days posttreatment	Product 9		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7		#DIV/0!	#####
7			
11		#DIV/0!	#####
11			
15		#DIV/0!	#####
15			

Days posttreatment	Others		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7		#DIV/0!	#####
7			
11	0.30	0.34	0.06
11	0.38		
15	0.36	0.37	0.01
15	0.37		

Days posttreatment	Products 1a, 1b, 2, 5, 6, 9		
	% applied	Mean	SD
0	0.00	0.00	0.00
0	0.00		
1	0.14	0.19	0.07
1	0.24		
3	0.40	0.45	0.07
3	0.50		
7	0.79	0.88	0.13
7	0.97		
11	1.59	1.59	0.01
11	1.58		
15	1.82	1.78	0.06
15	1.73		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Uracil label
Irradiated samples
Data obtained from Table 9, p. 35; Table 15, p. 41 of the study report.

Days posttreatment	Total recovery		
	% applied	Mean	SD
0	100.00	99.48	0.74
0	98.95		
1	99.67	99.41	0.37
1	99.15		
3	98.78	98.86	0.11
3	98.94		
7	97.81	97.69	0.17
7	97.57		
11	97.72	97.03	0.98
11	96.34		
15	99.09	98.39	0.99
15	97.69		
Average	98.48		
SD	1.05		

Days posttreatment	Extractable Residues		
	% applied	Mean	SD
0	98.49	97.98	0.73
0	97.46		
1	98.01	96.71	1.85
1	95.40		
3	90.87	89.83	1.48
3	88.78		
7	89.69	90.05	0.51
7	90.41		
11	87.66	86.04	2.30
11	84.41		
15	87.33	85.67	2.35
15	84.01		

Days posttreatment	Non-extractable Residues		
	% applied	Mean	SD
0	1.51	1.50	0.01
0	1.49		
1	1.57	2.61	1.47
1	3.65		
3	7.23	8.36	1.60
3	9.49		
7	6.50	6.02	0.68
7	5.54		
11	7.27	8.20	1.32
11	9.13		
15	7.93	8.89	1.35
15	9.84		

Days posttreatment	NaOH Volatile Trap		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.03	0.03	#####
1			
3	0.22	0.22	#####
3			
7	0.73	0.73	#####
7			
11	1.56	1.56	#####
11			
15	2.24	2.24	#####
15			

Days posttreatment	Parent		
	% applied	Mean	SD
0	97.39	96.91	0.68
0	96.43		
1	93.49	91.81	2.38
1	90.12		
3	77.15	76.25	1.28
3	75.34		
7	68.97	72.03	4.32
7	75.08		
11	66.48	61.88	6.51
11	57.28		
15	50.64	52.35	2.42
15	54.06		

Days posttreatment	M800H08 (Product 10)		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.13	0.10	0.05
1	0.06		
3	0.29	0.27	0.04
3	0.24		
7	0.33	0.23	0.15
7	0.12		
11	0.32	0.49	0.23
11	0.65		
15	1.05	0.84	0.30
15	0.63		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Uracil label
Irradiated samples
Data obtained from Table 9, p. 35; Table 15, p. 41 of the study report.

Days posttreatment	Product 1a		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3	0.90	0.90	0.01
3	0.89		
7	2.12	1.93	0.28
7	1.73		
11	2.33	3.01	0.95
11	3.68		
15	4.44	3.87	0.81
15	3.30		

Days posttreatment	Product 1b		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3	0.54	0.43	0.16
3	0.32		
7	0.06	0.06	#####
7			
11	0.30	0.34	0.06
11	0.38		
15	0.74	0.60	0.20
15	0.46		

Days posttreatment	Product 2		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3	0.27	0.25	0.03
3	0.23		
7	0.45	0.32	0.19
7	0.18		
11	0.58	0.55	0.05
11	0.51		
15	1.17	0.94	0.33
15	0.71		

Days posttreatment	Product 3		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.30	0.31	0.01
1	0.32		
3	0.94	0.99	0.07
3	1.04		
7	1.27	1.07	0.28
7	0.87		
11	1.15	1.53	0.53
11	1.90		
15	3.14	2.73	0.58
15	2.32		

Days posttreatment	Product 4		
	% applied	Mean	SD
0	0.63	0.62	0.02
0	0.60		
1	0.78	0.86	0.11
1	0.94		
3	1.23	1.21	0.03
3	1.19		
7	1.52	1.43	0.13
7	1.34		
11	1.62	1.84	0.30
11	2.05		
15	3.31	2.98	0.47
15	2.64		

Days posttreatment	Product 5		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.10	0.15	0.06
1	0.19		
3	0.36	0.38	0.03
3	0.40		
7	0.39	0.29	0.15
7	0.18		
11	0.53	0.68	0.21
11	0.82		
15	1.25	1.20	0.08
15	1.14		

Chemical: Saflufenacil
MRID: 47127825
PC Code: 118203
Guideline: 835.2410

Continuous irradiation
Uracil label
Irradiated samples
Data obtained from Table 9, p. 35; Table 15, p. 41 of the study report.

Days posttreatment	Product 6		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.43	0.53	0.14
1	0.63		
3	1.50	1.55	0.06
3	1.59		
7	1.51	1.38	0.19
7	1.24		
11	1.56	2.21	0.92
11	2.86		
15	2.63	2.37	0.37
15	2.10		

Days posttreatment	Product 7		
	% applied	Mean	SD
0	0.47	0.45	0.03
0	0.43		
1	0.15	0.14	0.01
1	0.13		
3	0.30	0.29	0.01
3	0.28		
7	0.21	0.18	0.05
7	0.14		
11	0.14	0.24	0.14
11	0.34		
15	0.62	0.59	0.05
15	0.55		

Days posttreatment	Product 8		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	1.64	1.90	0.37
1	2.16		
3	4.70	4.87	0.24
3	5.04		
7	8.16	7.03	1.60
7	5.90		
11	12.33	13.01	0.95
11	13.68		
15	17.34	16.15	1.68
15	14.96		

Days posttreatment	Product 9		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1	0.99	0.93	0.09
1	0.86		
3	2.68	2.45	0.33
3	2.22		
7	4.56	4.02	0.77
7	3.47		
11		#DIV/0!	#####
11			
15		#DIV/0!	#####
15			

Days posttreatment	Others		
	% applied	Mean	SD
0		#DIV/0!	#####
0			
1		#DIV/0!	#####
1			
3		#DIV/0!	#####
3			
7	0.14	0.15	0.01
7	0.15		
11	0.34	0.30	0.06
11	0.26		
15	0.99	1.07	0.11
15	1.14		

Days posttreatment	Products 1a, 1b, 2, 5, 6, 9		
	% applied	Mean	SD
0	0.00	0.00	0.00
0	0.00		
1	1.52	1.60	0.11
1	1.68		
3	6.25	5.95	0.42
3	5.65		
7	9.09	7.95	1.62
7	6.80		
11	5.30	6.78	2.09
11	8.25		
15	10.23	8.97	1.78
15	7.71		

Attachment 3: Transformation Pathway Presented by Registrant
Illustration of Test System
Comparison of Artificial Light to Natural Sunlight

Figure 19. Proposed Degradation Pathways of BAS 800 H Under Soil Photolytic Conditions.

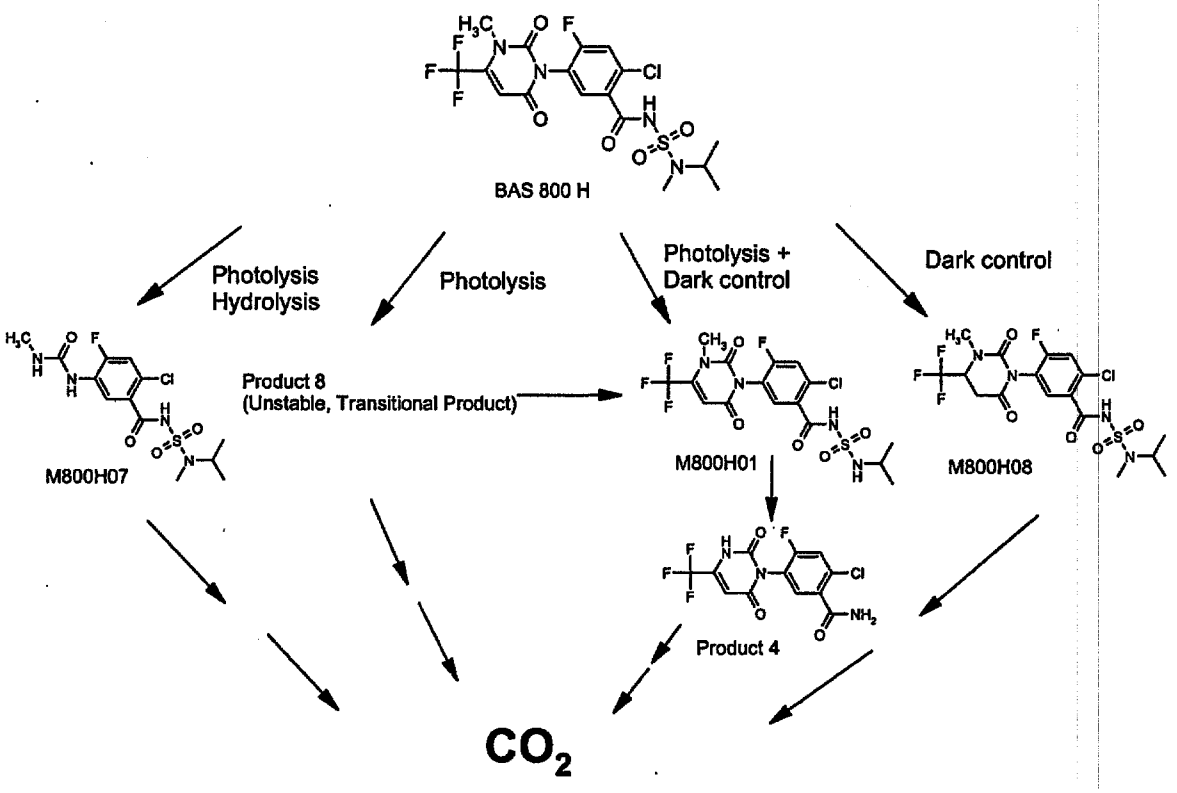


Figure 3. Diagram of Photolysis Setup.

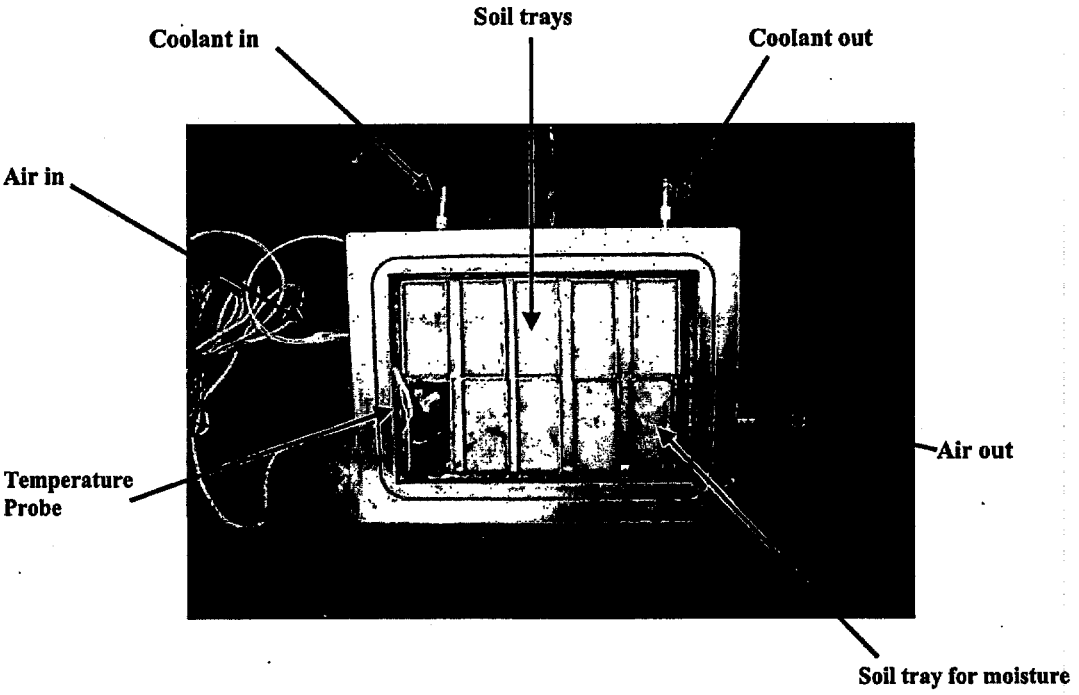


Figure 4. Diagram of the Test System For Dark Control.

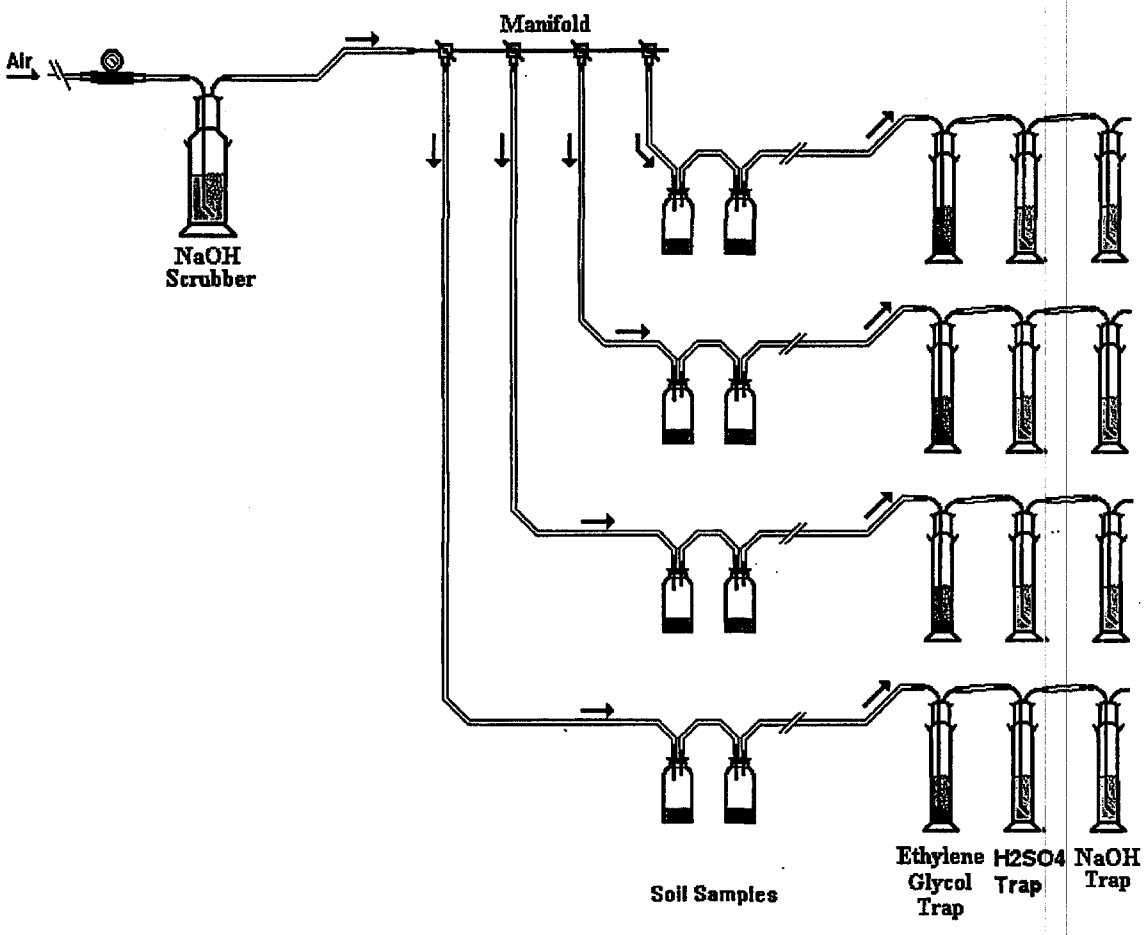
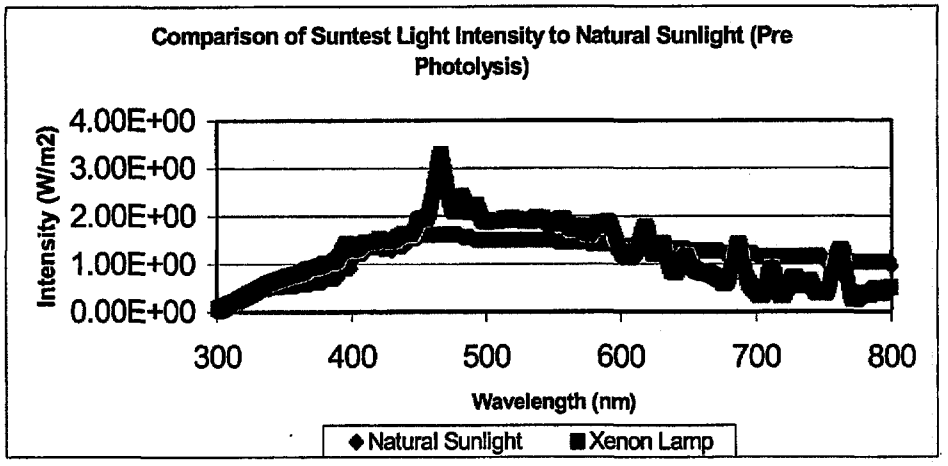


Figure 2. Comparison of Xenon Lamp Light Intensity to the Natural Sunlight Intensity at 40° N Latitude

Beginning of Irradiation Period



End of Irradiation Period